Consonance between lifestyle and spatial patterns in Yoruba Domestic Architecture

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Cynthia Omolola Adeokun

Abstract

The thesis focuses on how well suited lifestyle patterns are to different spatial types currently existing in the domestic architecture of the Yoruba people of South Western Nigeria, and on meanings underlying space use, in traditional and contemporary housing. Changes in Yoruba domestic architecture are quite marked, with contemporary residences gaining new uses and losing others, due to the development of new buildings for some previously domestic activities. The contemporary condition, which is the main thrust of the research, is also typified by changes in income levels, family structure and education in post-colonial Nigeria. Although some studies have addressed these changes, the actual influence of traditional housing on new housing layouts is little researched.

The hypothesis is that social changes will be manifested in transformations of the configuration of interior spaces and of space use with consequent spatial patterning that is a modification of the new within the existing. The analysis of activity and object locations proved valuable in unpacking social meanings embedded in the domestic space. A number of households were studied in four residential areas of Ile-Ife, each representative of distinct socio-economic groups and construction periods, using structured interviews, and analysis of the floor plans.

The results revealed a core set of space labels specific to each spatial type, expressed in old spatial types that are absent from the new areas, in the new spatial types absent from older areas, and in the enduring spatial types found in all the areas. There was a strong correlation between house types and lifestyles, manifested via variations in income and education, and most obvious in differences in space use in the traditional orowa (central hall), and the kitchens and living rooms of new house types. Satisfaction with the domestic space was shaped by respondents' ideals, which were related to socio-economic factors. The study demonstrated a link between lifestyle and space use, and the effect of ideals on how the domestic space is perceived.

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Contents

List of Tables

List of Figures

Chapter 1: Introduction and problem definition

"A house that has been experienced is not an inert box". *p vii Bachelard (1964)*

Domestic space use is often studied by focusing on what is done in the home and where, but what is of greater interest here are the patterns formed by the connection between the locations of domestic activities and related objects. These patterns embody concepts such as symbolic meaning, identity, and social relations between inhabitants in a given context. It is the interaction between the social realm and physical space that is of interest in this study.

1.1 Introduction: - Domestic Space as a 'site of interest'

Domestic space is a place where interaction between different categories of inhabitants, personal aspirations, and cultural ideals are expressed (or obscured) in everyday domestic activities and material culture. The focus of this research is on how the physical qualities of dwellings interact with social and personal ideals, and how changes in the way people live that emerge over time, influence the way rooms are connected to each other, the location of activities, and the material culture of the home. To explore these relationships, the domestic architecture of the Yoruba people of South-west Nigeria (West Africa) [1] was chosen as the specific context of inquiry.

Ethnographic data was obtained for one hundred and sixty households from four areas in Ile-Ife, Nigeria in a single-stage sample in mid-1996, with each sample stratum being quite representative of traditional and contemporary ways of living and of socio-economic levels. Ile-Ife is a medium sized town of about 326,000 inhabitants[2]; in a region occupied by more than 20 million ethnic Yorubas who mainly reside in urban settlements[3] and is about 250km from Nigeria's largest coastal city of Lagos.

[1] This also happens to be the natal culture of this researcher. The researcher had previously conducted a related study [Adeokun (1988)] in the area.
[2] Ile-Ife estimated population in 1991 was 186,900. Information obtained from http://www.world-gazetter.com/c/c 11/01/2004.
[3] The Yoruba have lived in urban settlements for a long time. Nigeria's 1952 census shows that 22% of the 5 million Yorubas lived in 6 cites with population of 100,000 and over. The same census states that the 12 largest Yoruba cities each had a population of over 40,000. Bascom, W. (1962) *American Anthropologist, New Series,* **64,** 699-709.

The decision to focus on the connections between everyday domestic activities that take place in time and space, and on the objects kept in the domestic space to understand a social process, was influenced by the following premises. Firstly, by the fact that interactions between human agency and physical space have been noted in various research e.g. Korosec-Serfaty (1985); Altman and Werner (1985); Chapman and Hockey (1999) to result in complex, and sometimes conflicting relationships underlying how and where activities are conducted, and where objects are stored. In many of these studies, a small number of objects are identified as potent 'representations' of a culture/society's cosmology; of which Bourdieu's (1973) study of the Kabyle house is a seminal example, of analyses of the organisation of normative aspects of the domestic world.

Of interest in this thesis were research such as Cooper Marcus (1975); Csikzentmihalyi and Rochberg-Halton (1981); Altman and Werner (1985); Kent (1990); Allison (1999), Chapman and Hockey (1999), and Miller (2001), that have looked at everyday activities/ objects and their meanings, from an anthropological or sociological perspective. Csikzentmihalyi and Rochberg-Halton's (1981) research[4], for instance identified that many of the objects in the American home[5] communicated non-tangible values about the inhabitants. These sentiments are echoed in Miller's (2001) description of the home as the site of many 'conflicts' between human agency and the physical structure of the house, and Douglas' (1991) description of the home as a 'memory bank' capable of transmitting social meaning through its regular activities.

Secondly, the mobile nature of most domestic objects makes them ideal 'vehicles' for expressing symbolic and functional ideas and values through the use of simple measures such as the re-arrangement of furniture and other domestic objects. Such measures

[4] Csikszentmihalyi and Rochberg-Halton's study based on interviews with several members of 82 families in the Chicago Metropolitan Area in 1977, focused on the objects that people keep in their homes and on objects that were considered special by the inhabitants. The study showed that there were a wide range of meanings attributed to domestic objects by the inhabitants that range from personal memories about self and others, enjoyment, style, to the ability to embody an ideal, personal accomplishment and to personify the qualities of an actual or metaphoric person. They also identified generational differences in the objects mentioned as special and in the meanings attributed to them.

[5] Examples of some of the objects include: - television, beds, photos, furniture, plants, books, silverware, plates.

according to Clarke (2001), Garvey (2001), and Roth (2001)[6] make the dwelling, its activities, and objects capable of reflecting not only individual self-images but also cultural ideals, due to the fact that individual life is invariably embedded within a cultural context. The home as such, is a site of continuity and also of transformation, and the analysis of how a dwelling is used for everyday life can provide insight into relevant social relations. Although many of the studies above were pertinent to this research in delving into the meaning of everyday domestic objects and activities, few have analysed physical space as a vital aspect of this process, and it is this relationship between physical space, domestic objects and activities, that this study sought to address.

The main research question thus focussed on the degree of consonance that exists between lifestyle patterns, and transformations in spatial and space use patterns that have occured over time in Yoruba domestic space morphology. In order to address the question of the link between spatial transformations and lifestyle patterns, it was necessary to also analyse social meanings and rules that underpin the spatial and space use patterns observed in both traditional and contemporary housing in this study.

The questions addressed with regards to spatial patterns are two-fold: - firstly, it was nessessary to identify the configurational types that exist within the sample. This revolved around the analysis of how function spaces are connected together, how the interaction between inhabitants and visitors is resolved in the physical planning of the dwellings, how the dwellings function in terms of the relationship between the internal and external world, and whether consistent patterns of spatial relations exist between key function spaces/rooms underneath the variety of floorplans found in the sample. Following on from this is whether differences in spatial configuration relate to differences in social conditions and lifestyle preferences.

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[6] Clarke (2001) study was based on ethnographic examples in North London.

The second aspect of the spatial question relates to way the spaces are actually used. This revolves around what constititutes the 'conventional' pattern of space use in the cultural context, as well as the need to understand any differences in where activites and objects occur in specific spaces, and whether this reflects social differences. The patterns of objects and the location of activities, raises a second point about movement patterns in and around the domestic spaces, and the intensity with which respective spaces are used, and whether this bears a direct relationship with social differences, or merely reflects infrastrutural shortcomings of which quite a few exist in any developing country.

To that end, the floor plans, domestic activities and objects locations were analysed in examples of the two main variants of traditional, multi-generational, extended family compound/houses chosen from a neighbourhood in the old Ile-Ife town core (Enuwa). The two variants are a) the courtyard house, comprising small rooms arranged round a courtyard/impluvium or interconnected small courtyards/impluvia, and b) the 'orowa' detached house with a central multi-purpose 'hall' (orowa) instead of the courtyard (see Figure 1-1, p19 and Figure 1-2, p19). The neighbourhood is home to many households with little formal education, and who are in the main, low income earners, but some of the household heads in Enuwa were chiefs, and are also part of the traditional political structure of Ile-Ife.

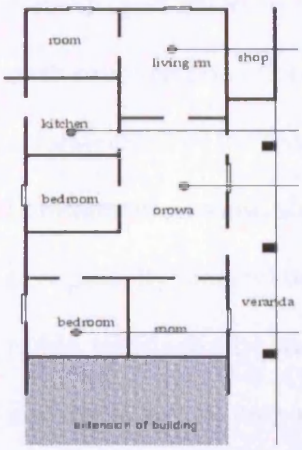


Figure 1-1: Example of orowa house

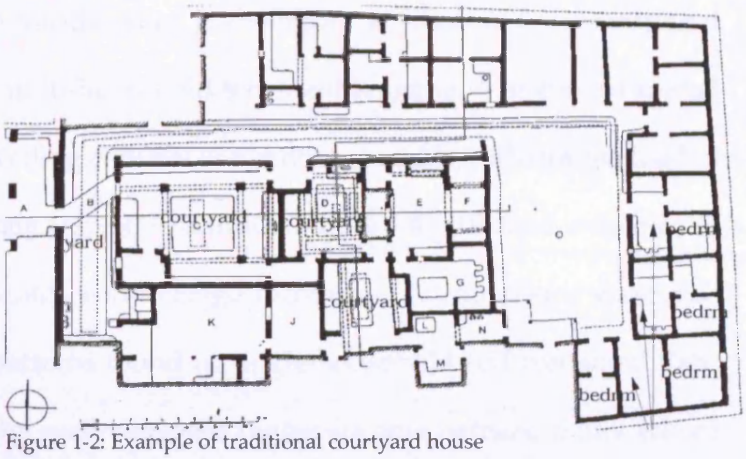


Figure 1-2: Example of traditional courtyard house

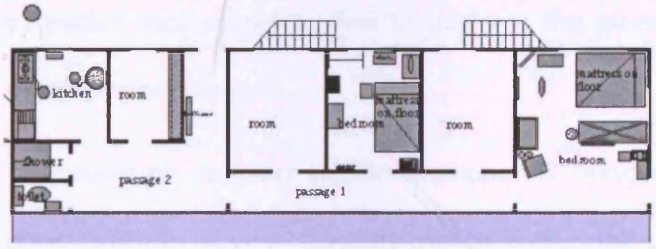


Figure 1-3: Example of self-contained flat

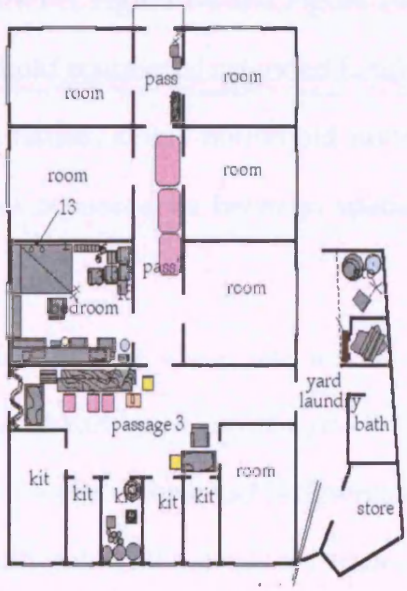


Figure 1-4: Typical plan of tenement house

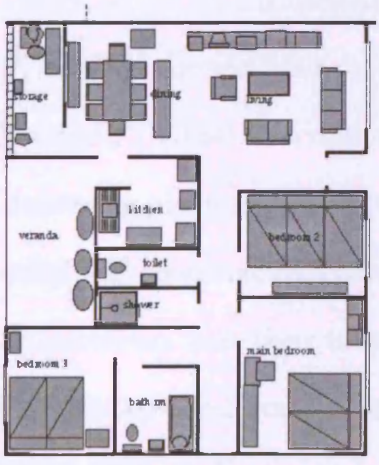


Figure 1-5: Example of semi-detached house

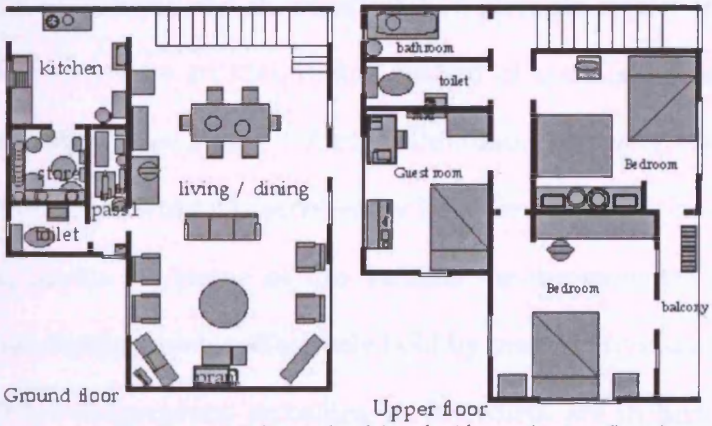


Figure 1-6: Example of detached house (on two floors)

Activity and object location patterns identified in the traditional houses were compared with more recently constructed multi-household tenement housing. The typical spatial arrangement of the tenement dwelling consists of a central corridor with double-loaded habitable rooms and shared kitchen and toilet facilities (Figure 1-4, p19), and were mostly occupied by non-related households eon average incomes. Comparisons were also made with activity and object patterns found in single-household self-contained flats, and detached houses occupied by well educated higher-income earners, many whom have made Ile-Ife their home for work reasons (see Figure 1-3, Figure 1-4 and Figure 1-6, p19). These three categories of housing- a) multi-household traditional extended family housing, b) multi-household tenements and c) self-contained, single household units, provided real opportunities to address the question of consonsance between spatial patterns and lifestyle.

The research interest in the consonance between lifestyle and space use led to a consideration of what lifestyle means within the context of Yoruba household practices and how it relates to socio-economic factors. Lifestyle as a social construct is described by Brunso et. al (2004) as the embodiment of symbolic and stable differences in personal values, which are manifested as regularities in (domestic) practices, and also structured by cultural context. His view about lifestyle and its manifestation strongly relates to Bourdieu's (1984) description of lifestyle as an identifiable system of classified and classifying practices (i.e. distinctive signs) (see Figure 1-7, p21). Mediation between the social and economic background of an individual (described by Bourdieu as conditions of existence), and their lifestyle, occurs by virtue of the 'habitus' or the generative disposition, which consists of similar judgements collectively held by many individuals about different facets of life. These judgements, according to Bourdieu, are in turn,

strongly influenced by the individual's educational level and the social background of their ancestry; that is, their educational and cultural 'capital'. The suggestion by Bourdieu is that individuals with similar habitus share similar educational and cultural capitals, and usually, similarity in habitus generates similar patterns of domestic practices even in domestic spaces types that cut across different periods. The resultant effect is continuity in the particular ways of conducting many domestic practises and decisions about where to locate common objects, although the degree to which this persists in each spatial type may vary.

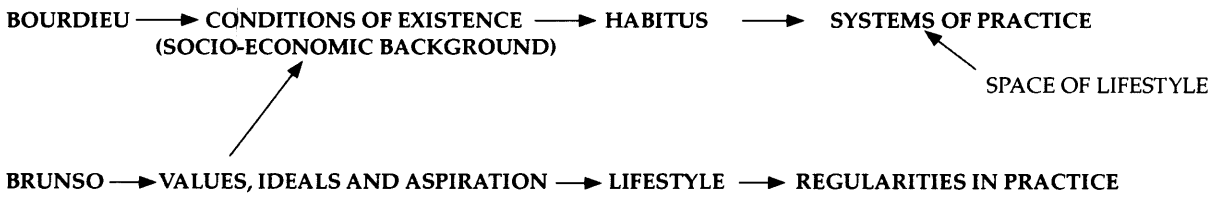


Figure 1-7: the connection between values/ideals and observable practices

Conversely, differences in educational and cultural capital would generally result in distinct differences in domestic practices, and it is suggested that these differences, act as symbolic boundaries between observable patterns and lifestyles. It is noted that relationships between so-called independent variables can mask more complex systems of relationships, or in some cases according to Bourdieu (1984), are mere transformations of other variables, hence, worthy of analysis.

This proposition that there is a strong connection between education, socialization (cultural capital), and lifestyle is also emphasised by Van Eijck (1999), and Van Eijck and Bargeman (2004) and was also noted in this study. Many households with similar income and educational levels were found to have quite similar activity and object patterns, even when mitigating factors (such as family structure) were taken into

consideration. Consequent to the issues above and based on studies such as Van Eijck (1999), and Lastovicka (1982), lifestyle as a sociological construct was operationalized in this study in terms of the effect of different levels of a) education, b) access to fiscal wealth, c) gender and d) generational differences, on physical layout and activity and object patterns. Admittedly, the income level is usually related to the level of education and showed similar effects in the sample. Both proved to be significant points of difference or boundary between lifestyles, and between domestic practices.

1.1.1 Understanding developments in spatial patterns and space use

The way in which the relationship between lifestyle and spatial transformations were addressed in this thesis was primarily by identifying what has remained relatively resistant to new influence, which in most cases is evidenced by enduring form, content, or/and meaning, in the layout of the houses sampled. This approach is related to Rapoport and Hardies's (1991) methodological outline on how to approach the question of continuity and change, discussed in some detail in chapter two. Yates (1991) also provided some useful pointers that were adopted in this study, about how continuity can be established by identifying enduring features in a) spatial terminology, b) meaning and social position (derived from the analysis of respondents descriptions), and c) superficial changes to the building envelope that have had little effect on the functional relationship between activities.

Change on the other hand, is about aspects that have undergone transformations in form, content, meaning, or/and material culture between the traditional, and modern dwellings. Views about change range from the functionalist view of endless equivalence

to the historian's view of endless progress. According to Gartman (2002), and Dodgshon (1998) it may be seen simply as the result of imposed structure, or mainly derived from individual human agency or a combination of both. The view in this study is that change derives from the interaction between structure (perhaps best defined as organizing principles) and human agency in terms of individual choices [e.g. Giddens (1984)].

The end result of change itself is also open to question. Independent of whether change is an additive process that leads to the replacement of old forms by new ones [Glasssie (1975)], or a process of selective interaction between the old and new [e.g. Bascom and Herskovits (1959)], it is fundamentally reflective of shifts in the nature of relationships between members of society, or inhabitants of a household. The link between lifestyle and spatial transformations was addressed from a position more akin to Saussure's (1918) stand that- *"What predominates in all change is the persistence of the old substance; disregard for the past is only relative". – p50,* i.e. total obliteration of the old is rarely the case, and it is often possible to trace evidence of the old within the new.

1.1.1.1 Social and spatial changes in Nigeria's History- a brief account

The reality of change in Yoruba domestic architecture is inexplicably tied up with Nigeria's colonial experience, with the two most influential periods in terms of residential buildings, being the colonial and post-colonial eras (between 1850-1960 and 1960-1979 respectively)[7]. The relevance of the colonial experience to the geographical, and social fabric of countries like Nigeria particularly in relation to nationalism, land ownership, gender roles, and language is noted by many writers [e.g. Oyewumi (2005)]. Whilst the effect of colonialization on architectural heritage may be contested, the fact remains

[7] The different stages in the 'memory' of the country's history were identified by Belasco (1980) as: -
The pre-contact period i.e. before European contact – (between 800 a.d. to 1400's)
The post-contact period i.e. during European contact. – (between 1500's to 1700's). Also the pre-colonial period(the trans-Sahara trade period)
The colonial period – (between 1850 to 1960)
The post-colonial period – (between 1960 to 1979) and
The transition to democracy era – (from 1980 onwards)

that the colonial period persisted for a long time in Nigeria, during which new floor plans were introduced. Writers like Young (2001) have also placed strong emphasis on the spatial effects of the colonial experience in restructuring 'indigenous space' in terms of the interaction between newly introduced spatial concepts and existing ones at a regional and domestic level[8]. Its connection with lifestyle and domestic space use, is perhaps more relevant in terms of ambivalent interaction between old and newer values/ideals and its effect on the arrangement of internal spaces in the domestic space. Regardless of which notion of change (struggle, selective absorption or obliteration) is accepted, or how the postcolonial state is perceived- as failure or modest success, spatial identity in Yoruba land was undoubtedly influenced by the colonial experience.

1.1.1.2 External contacts and its effect on the Urban Domestic Fabric

The colonial and immediate post-colonial periods were marked by significant changes to the traditional urban pattern of radial routes from the town centre (with the palace & main market) to the outskirts, with residential quarters of groups of extended families organised on parcels of land. Grid-like routes and grid-planned tracts of housing developments were in many instances superimposed on older radial routes, made possible by the commodification of land[9]. There was also a parallel development of a transition from an extended family focus towards a more nuclear family focus, as a result, of which many people resided away from their extended family in other towns. This was the case in Ile-Ife because it was the headquarters of the local authority for outlying towns and villages in the colonial era, leading to an influx of non-Ife residents taking up newly created clerical jobs.

[8] Young (2001) describes colonialism as a process of *'de-territorialising'* and *'re-territorialising'* of local landscapes and structures of power and a process that restructures 'native' space.
[9] This was facilitated b y the transfer of common-hold family land to plots owned by individual nuclear families and hence easier to sell on.

There was also an influx of new 2-storey domestic plans different from the single storey traditional ones, in response to demands generated by the influx of non-Ile-Ife residents mentioned above, in tandem with the introduction of new materials and construction methods. The externally introduced domestic plans were mainly the 'Brazilian-style' houses introduced by returned freed slaves, and colonial designs commissioned by the British government for expatriate civil servants (discussed in more detail in chapter three). These subsequently influenced the spatial arrangements of existing plan types, resulting in the emergence of a new local domestic type – the multi-household tenement dwelling (Figure 1-3, p19).

The institution of formal education by the colonial government was made more accessible via Christian Missions establishing schools, and facilitated aspects of British culture and western values to filter into indigenous communities, aiding the integration of the West African region into the world economy. This process was further accelerated by the emergence of cash crops such as cocoa in Ile-Ife and other parts of Yoruba Land, and subsequently petroleum exports, enabling a fast transition from mainly agrarian into modern cash economies based on a dramatic expansion of the wage system.

The period immediately after independence was marked by the need for indigenous candidates to fill middle-level public sector and high-level civil service jobs. These, coupled with the creation of a federal university in Ile-Ife in 1966/67, resulted in an increase in differences in income, changes to patterns of property ownership (an explosion in rental accommodation), and to family structures (from the extended to a nuclear family focus), but the main consequence on social structure was the emergence of an educated or moneyed professional middle class.

All these consequently led to a huge expansion in single-household blocks of flats, and detached houses targeted at the new elites who continued the transition towards the more nuclear (and monogamous) family orientation. In addition to the catalysts described above, changes in the configuration of the interior spaces of the floor plans were also necessitated by the introduction of new domestic objects, and activities. The dwelling for example, had to respond to the need to store objects like the car, books, and labour-saving devices for food preparation and processing. In addition, the dwelling had to respond to the advent of internal plumbing to many houses, and the consequent integration of toilets and bathrooms into the main structure of the dwelling.

Nonetheless, there were differences in the way each plan type responded to these demands due in the main, to differences in aspirations and the socio-economic background of the target household in an increasingly rental sector. For example, the need for a garage is strongly dictated by economics, and the importance attached to the provision of a designated study room by the educational level and career choices of the household heads.

In the initial stages of the study, it was thought that a predominant number of internal function spaces and spatial types would have been preserved over time, based on the assumption that robust stability in the domestic world is a more likely tendency to enable a culture survive, without ruling out the emergence of 'new' relevant spatial types. The reality of the situation is that several new function spaces have emerged over the last thirty years (e.g. study, garage), coupled with the disappearance of key traditional function spaces such as the orowa, although this is not to say that the functions associated with the orowa have disappeared from the domestic space. New spatial types were also identified, that were in the main, derivatives of existing types

albeit with significant modifications to fit new activities/objects, except in cases of major shifts in lifestyle (e.g. the single-household flats). In view of the above, the main research question can be summarised thus: -

a) How closely are the morphological changes identified in the sample, and changes in the location of domestic activities and objects, and in the relationships between activities and related objects, indicative of lifestyle differences ?

b) Is the predominant effect of the passage of time on the development of Yoruba domestic space reflected primarily as a persistence of key morphological features, or as major transformations of spatial types?

Another key aspect of the research question relates to how lifestyle differences are constituted in meanings attributed to everyday objects and practices in the Yoruba domestic situation, in symbolic terms and also in terms of the motivations underlying the actions or patterns observed. Motives and decisions according to Merleau-Ponty (1945), are two elements of the same situation; the former being a series of possibilities as- a certain way of looking at something- and the latter, as action, that is, a selected set of options. Motives enable the 'leap' from what is possible, determined from individual desires or context-specific customs or norms, to what is manifested in physical space, similarly expressed in Giddens' (1984) description of reasoning as the overall plan guiding actual patterns. Although motivation is not always easy to understand or articulate, it is useful to examine motives in order to understand meaning embedded in domestic space, to identify the effects of cultural values on space use, as well as the influence of personal preferences.

The main questions that are addressed in the thesis with regards to meaning in the domestic space are thus: - Firstly, what are the social rules that govern the activity and object patterns that were identified in the sample, and the various spatial types? This is addressed primarily in relation to who participates in the various domestic activities; whether participation is undertaken solely by individuals, the whole household, or also involves non-inhabitants. Secondly, what is the perception of the domestic domain in relation to the activities and objects embodied in the domestic space: - is the domestic space primarily a place of leisure or of work, and are there differences in the experiences of different categories of inhabitants? Thirdly, what is the household's relationship to their domestic world of objects and activities, and do relationships attributed to domestic activities and objects by the respondents reflect any lifestyle differences?

To this effect, respondents were asked to describe the activities and objects that they considered important or special, and why these were so, because the motivations behind the way an activity is conducted, or an object is used, are relevant to understanding the meanings they embody. A series of important activities (e.g. family relaxation, cooking, and trading), and special objects (e.g. retail goods, electrical goods, cooking utensils, and portable water containers) out of the broad range identified in the sample were used to track shifts in meanings in relation to socio-economic factors such as income, education, generational gap, and gender, in order to outline lifestyle differences.

The tracking process revealed that while some objects were attributed with similar meanings across the socio-economic groups surveyed, pointing towards a greater ability to embody customary values, other objects reflected a much wider variety in meanings suggesting a greater potential to embody more individualistic ideas. The shifts occurred mainly along educational lines, and for a few activities (e.g. cooking, trading, and

farming) and objects (e.g. cooker, cars and bikes, and religious items), also along gender or generational lines. Values attributed to most of these activities and objects by the respondents revealed a greater focus on functional over symbolic aspects, contrary to the findings in Csikzentmihalyi and Rochberg-Halton (1981), and Clarke (2001), although Belk (1988) and Dittmar (1992) support the validity of functional as well as symbolic aspects. In addition to this tendency, a few activities rather than objects were described in more symbolic language (e.g. hosting social events).

The meaning regions attributed to domestic activities and objects by the respondents suggested a balance between these positions. The tracking of meanings attributed to activities and objects in relation to their physical location in the domestic space, and their correlation with socio-economic issues was an important part of the analysis.

Finally, the idea that identifiable motives underline object and activity locations and by extension, space use, pointed towards the presence of rules influencing space use patterns and meaning. Rules can either enhance continuity, or engender change when of a more flexible form. In general, rules exist either as what Wieder (1970) describes as a) 'game-theoretic' rules that formally constitute and prescribe, b) methodical procedures (as in the case of formulas) that contain exact relationships between two or more elements or c) in the sense of habit or routine. He pointed out that the scope and applicability of rules are in development in actual instances of usage[10], therefore, rules in the domestic setting are likely to more interpretative whereby in a given context, a rule may be applied, modified, or even suspended to integrate with individual motivations. Rules are described similarly by Giddens (1984) and Wood and Beck (1994), as implying the constitution of meaning, and the sanctioning of specific modes of social conduct, and tend to be about a practical competence of space use rather than theoretical.

[10] He cites Garfinkel (1967) and Zimmerman (1970) as examples of major research in this area in which rules in ethnographic situations have been found to be in development during the actual process of conducting activities.

Rules were also of interest, because as Hanson (1998) explained, real houses are the complex interaction of the social and individual worlds of their occupants, and their manifestation in the spatial realm can often be seen as arbitrary or idiosyncratic, hiding often ordered ways or rules of using the home devised by each inhabitant. In summary, rules are flexible, generic properties within which individuals make decisions and choices, are more to do with the creation (or sustenance) of habits or routine and also express lifestyle values and ideals in space.

To address the ideas about meaning, rules, and negotiations in space, inventories of the activities and objects obtained from the sample were analysed. This helped to uncover how the location of activities and objects are shaped by their meanings, differences in the organising schema of object arrays in various morphological types, and how potential conflicts between object and activity locations may be resolved within the context.

1.1.2 A diachronic perspective based on a synchronic study

The thesis in essence utilises synchronic data to outline a diachronic series of 'snapshots' of the development of Yoruba domestic space and space use. As such, it is worthwhile to outline how the issue of the passage of time was addressed in the research. Allison (1999) described temporality as being pertinent at the level of the day-to-day cycle of domestic life; evidenced in daily changing relationships between people, household objects and space, and also in the longer duration of the household lifecycle, manifested in variations in the means of production, residential mobility and stages of household development. Her main argument though, is that the dwelling is more likely to reflect behaviour that persists over time, whilst, retaining real potential for changing patterns at

the day-to-day level, and also over a longer duration of time: - a premise of this thesis.

The issue of how time can be approached methodologically is described by Holt (1995) as being either by: - a) embarking on a longitudinal study of the process through which lifestyles change over time [e.g. Van Eijck and Bargeman (2004)], b) doing a historical study that traces the cultural genealogy of particular lifestyles [e.g. Thompson (1996)], or c) employing the use of comparative studies that utilise contrasting cases to illustrate particular social conditions constitutive of a particular lifestyle [e.g. Lamont (1993)]. The way time is perceived in this thesis is more akin to the third approach. The design of the sample was considered viable to serve as a proxy for time, mainly because each sample stratum is socio-economically distinct and the house plans are quite representative of different construction periods. The hypothesis on time is summarised thus: - Different spatial types in the sample seem to embody different stages in the transformation process of domestic buildings. Each stratum possesses a distinct sociological identity and is generally of different periods of construction[11].

1.1.3 Summary of Research Questions

The research questions were borne out of a desire to understand morphological developments in the sample of dwellings, based on its enduring elements (continuity) and points of departure (change), in the light of relevant social catalysts within Yoruba culture. The main research question is about the degree of consonance or 'match' between morphological types, and distinct space use patterns on the one hand, and lifestyle patterns on the other. This question is related to the effect of time in engendering a persistence of key morphological features, or a transformation of spatial types.

[11] These range from a more traditional way of living (extended family focus), low education and income levels, to those with high education levels, higher economic capital, a more nucleated family focus and increased scope of material culture.

The second part of the research interest is about the social rules and meaning that govern the activity and object patterns identified in the sample, by exploring the way in which respondents perceive domestic activities and objects. Finally, there was also a desire to understand how potential conflicts between the requirements of different activities and objects are resolved.

1.1.4 The Structure of the Thesis

The thesis has been structured in such a way as to discuss physical space, activities, objects, and meanings attached to them, and related theories separately, prior to a discussion and synthesis of the three main aspects. The introductory chapter is followed by - Chapter 2, the literature review chapter, which discusses the theoretical positions that influenced the analyses and interpretations, and focused on the three key aspects of the research question: - a) physical space, b) habitus and lifestyles based on the links between values, and the effects of socio-economic issues such as income, education, gender and age groups, on spatial morphology and space use, and on c) meanings embedded in domestic activities and objects. The main texts reviewed are – a) Hillier and Hanson (1984), Hillier (1998) in relation to physical space; b) Leferbvre (1974), Bourdieu (1984), in relation to habitus, and the social dimension created by the patterns of activities and objects in physical space. Wood and Beck (1995), Brunso et al (2004), Van Eijck and Bargeman (2004), Van Eijck (1999), Karlsson et al (2004), Bittman and Wajcman (2000), Wilson and Mackenzie (2000), Peterson and Kern (1996), were reviewed in relation to habitus, and lifestyles, aspirations, and the relationship with socio-economic issues. The main texts reviewed in connection with domestic objects, activities and meaning are Csikzentmihalyi and Rochberg-Halton (1981), Kent (1991), and Rapoport (1991).

Chapter 3 provides a brief historic background of the study area followed by a discussion of elements of traditional and contemporary Yoruba urbanism and its relevance to the thesis questions. It discusses patterns of traditional and contemporary social stratification, gender roles, farming, and commercial activities as important aspects of domestic life, and how these functioned as traditional status symbols, and the emergence of new status symbols.

Chapter 4 presents the following: - a) the description of key methods adopted for obtaining sociological information: - questionnaire design and interview protocol, b) the description of the key methods adopted for the analysis of the physical space- mainly space syntax theories and methodologies developed by Hillier and Hanson (1984), and the use of geometric typing methodology based on criteria such as the organization of the functional grammar of the domestic space as recognisable spatial *cores or 'sectors'* of related activities as defined by Amorim (1999), the degree of elaboration of the *threshold* between the exterior and the main interior spaces, and the tendency of the floor plans towards a lower or higher specificity of space use - related to Rapoport's (1990) and Kent's (1990) ideas about multifunctional versus mono-functional space. These chapters form part 1 of the thesis, which define the theoretical approach, the research context, and methodology.

Chapter 5 provides a demographic background to the sample, of the spatial types of the buildings surveyed, and the perceptions of the respondents about their dwellings. This chapter also provides the required spatial and socio-economic information on which subsequent chapters are based.

The second part of the thesis addresses the transformations in spatial morphology and spatial practices, and the socio-economic charateristics of these patterns based on the sample of traditional and contemporary dwellings. Chapter 6 deals with the analysis

sample of traditional and contemporary dwellings. Chapter 6 deals with the analysis of the configuration of the internal spaces and the distinct spatial patterns that exists, utilising space syntax methodologies, and also a procedure of geometric typology, for assessing the floor plans on the basis of criteria set out in chapter 4. The chapter identifies the enduring characteristics of each of the spatial types and their social identity.

Chapter 7 explores space use patterns expressed in physical space, dealing primarily with the analysis of conventional patterns of object and activity locations. The object and activity locations are obtained from the combined results of the questionnaires, as well as the object maps prepared for each floor plan by the researcher. Both chapters 6 and 7 end with a summary of the spatial rules and differences between the various types and how these may reflect socio-economic differences in the sample.

The third part of the thesis focuses on the social meanings (and rules) that inform the spatial and space use patterns identified in part 2. Chapter 8 deals with the analysis of some of the key social rules that shape the activity and object patterns identified, and how these reflect certain lifestyle values, and connects this to the meanings invested into the domestic activities and objects in the sample as described by the respondents. The idea was that the perception of the respondents would help in understanding the domestic world of the sample.

The concluding part of the thesis is a discussion (chapter 9) of the findings, based on the interaction between lifestyle conditions, activity and object meaning, and the agency of the physical space, based on the results of chapters 5 to 8. The discussion revolves around the correlation between social and physical changes, and the boundaries between lifestyle and physical space use patterns based on socio-economic differences. It concludes with a summary of the research findings and identifies topics for future research.

Chapter 2: Literature Review

"Inhabited space transcends geometrical space.... for in point of fact, a house is first and foremost a geometrical object, one which we are tempted to analyse rationally" *p 47 & 48. Bachelard (1964)*

The purpose of this chapter can be summed up thus: - establishing the basis for seeing physical, domestic space as a social entity, how the physical patterns map social aspects and how this informs the questions about meaning in domestic space use and changes over time. Physical space, together with activities and objects form the focus of interest.

2.1 Organisation of the literature review

Each home is slightly different from the next but at the same time forms a familiar hub of activities. It is on the one hand about the physical space but it is also about ideals, and motivations that influence space use and although these are invariably subjective, arguably they are not totally separable from the composition of physical space. The emphasis of this research as discussed in the introduction, was on the observation of everyday activities, and objects in space and in the range of meanings that individuals of different demographic characteristics attributed to everyday domestic objects. Rosselin (1999) stresses the fact that only the study of the interaction between the three (domestic space, the occupants and the objects) will reveal the means by which meaning, in the (domestic) environment is created and by extension, the main means by which lifestyle choices are manifested in space. Therefore, to understand the interaction between these phenomena a combination of theoretical approaches was adopted. But firstly, a few of the terminologies that are used extensively in the thesis are explained below and the most prominent are: - a) Household, b) Domestic space and c) Room Labels (functions).

A) The idea of using the household as the link between the physical structure of the house and social relations within the home has been explored in a considerable literature [e.g. Allison (1999), Yates (1991), McCNetting et al. (1984)], and some like Miller (2001) have highlighted that physical space is implicated in its definition because of its stress on co-residence. There are two main approaches to identifying a 'household': - The first is the idea of a relatively undifferentiated extended kin group developing through matrilineal descent groups to patrilineal descent groups, and to the nuclear family unit(Engels, 1972 and 1902). The approach adopted in this thesis as evidenced in the work of McCNetting et al. (1984), Levi-Strauss (1963) and others, views the household as a result of a system of rules of marriage and residence, rather than the result of patterns of behaviour. This provides greater scope, as it acknowledges that various types of households can exist in the same time frame, space (co-residence) and techno-economic background.

It was necessary to adopt a definition that is flexible enough to discuss households that are not based on familial links or on the traditional two-parent (married) household.[12] The flexibility required in the definition of the household is also reflected in the Yoruba word for household (ara ile), which does not always coincide with nuclear family dwellings, because of the tendency for houses to contain multiple nuclear families, have long-term temporary guests who may or may not be relatives, and the tendency for family to sometimes be scattered geographically. Consequently, the household was identified in this study if they shared the following features: - a) location (co-residence), b) function (if the prospective members participated in shared activities), c) Marriage and kinship ties, and d) Production (mutual resources in terms of pooling household income or shared contributions towards household upkeep).

[12] This need is highlighted by the fact that in Nigeria about 5% of women and 3.9% of men were cohabiting, about 2% were divorced or widowed and about a quarter of the women surveyed & over a third of the men were single. Information was obtained from the Nigeria 1999 National demographic survey conducted by National Population Commission (2000)

A criticism that may be levelled against the use of the household as the unit of analysis include the fact that rigid use of the co-residence criterion can create difficulties in accounting for transient guests, but, this was not a handicap as the interest was in the spatial manifestation of material culture, and not in the detailed make-up of the household. In addition, the production rule was useful in identifying non-related households.

B) The adoption of domestic space to describe the physical entity of the dwelling in the study was dictated by the desire to avoid some of the confusion that may be generated by the use of words like 'house'. It is a term that can cover a variety of dwellings in the study area ranging from the single-household detached house to multi-household rooming houses. The use of a more neutral description has also been adopted with real advantages in other studies such as Hanson (1998), and Monteiro (1997).

C) The room/space function (activity) as indicated by the respondent, is referred to as space labels' for the following reasons [see also Hillier and Hanson (1984) p150-151]. In many instances, several distinct activities occurred within the same physically defined space, and in some cases, the function/activity label attributed to a room did not adequately describe the diversity of activities in the room, and or even refer to the primary use of the space. The space label as defined in the thesis refers to spaces where distinct functions (as identified by the respondents) coincide with fully or partial enclosure by walls, as well as spaces that are only articulated spatially by furniture arrangements or by the geometry of the space.

The decision to analyse physical spaces, and the objects and activities together, was supported by the fact that physical space and space use by inference is quite complex. Giddens (1984) (in his critique of Foucault on timing and spacing in educational space) describes space as a 'complex' *"whereby its most important aspect is not any particular part of a building but its relational form"*. The complexity attributed to educational space portrayed above, is even truer of the domestic space, and as such it is likely to benefit from a combined theoretical approach.

Some ideas developed by Bachelard (1964); and Merleau-Ponty (1945) are explored in this chapter, in addition to studies that deal with space use, meaning and rules of domestic settings and objects. Hodder (1987) Kent (1990); Rapoport (1990), Rapoport and Hardie (1991), Richins (1994a, 1994b) Chapman and Hockey (1999), Miller (2001), amongst others, are discussed in this chapter as they proved quite valuable. These usually emphasise direct observation of the activities of a particular social group, and the evaluation of activities in the physical domain often with a focus on domestic artefacts, which formed the basis of this study. The work of Goffman (1959), Giddens (1984) and Dodgshon (1998) with their emphases on the routine dimension of human activity as manifested in a time frame in physical space, provided useful insight into issues of continuity and change in meanings invested in the domestic space.

Finally, the process of explaining the physical (domestic) space, and space use required spatial and sociological theories/methodologies that recognise space as possessing built-in social and contextual meaning. To this end, the nature of social relations was primarily explored through the work of Lefebvre (1974, 1984), Giddens (1984), Bourdieu (1984), Tversky (2003), and Brunso et. al (2004). Space syntax theory and methodologies developed by Hillier and Hanson (1984) were adopted for the analysis of physical space

because it embodied many of the parameters mentioned above,[13] in combination with a system of typification of geometric similarities of the plans developed by this researcher. Theories/studies about domestic settings [Lawrence (1982); Rapoport (1990)], of space geometries and adjacencies [Steadman (1983), Heitor et. al. (2003), and Colakoglu (2005)] and on domestic activities [Monteiro (1997), Kent (1990)] are also explored in terms of their analyses of activity patterns and space. In addition, Bernstein's (1973, 1975, 1990) twin concepts of classification and framing are explored.[14] These theoretical perspectives are discussed under the headings of

A) Physical space, and time,

B) Social space, habitus and lifestyle, and

C) Meaning in domestic activities and objects.

2.2 Physical space and time

Space often connotes a variety of meanings and the idea that space could be anything other than a physical thing was until recently, a strange concept [Forty (2000) and Lefebvre (1974,1984)]. Space was historically mainly defined by its geometric properties and was seen as neutral; reliant on the things that it contained, or on the activities that took place in it for meaning. Out of this kind of thinking grew the notion that space is also a social and mental thing [Tversky (2003)] or place, inasmuch as it was a geometric element. Somewhat more generally, Lefebvre (1974, 1984) ascribes the origins of the multiplicity of space, which usually implies a social dimension, as partly related to the emergence of modern society and the mode of production with its tendency for endless division. As such, the idea that space is neatly sectioned is not indicative of the

[13] This is not to suggest that meaning in domestic space can be understood separately from sociological considerations, but in recognition of the primal importance of space as a carrier of social information.

[14] see later in this chapter and also in chapter 7.

reality of the relation between different kinds of space (geometric, social, mental etc). According to Forty (2000), the concept of space as a generic term has evolved from the late 1890s to the early 1900s as enclosure with discrete parts, through to the inception of modern architecture,[15] when space was seen as a continuum, and the notion of inside and outside space is infinite.[16] The third view is more recent, and more in line with the position adopted in this study, whereby interior bounded space is seen as a series of interconnected spaces that are organised in a way that gives different 'weightings' to the rooms thereby attributing differing levels of social significance to spaces and activities. As such, spaces in domestic dwellings were viewed as providing a kind of fixed positions with a method of circulation and quite often, certain zones can be recognised that connote a distinction in social values attached to activities and objects that may be allocated to a specific space.

Merleau-Ponty (1945) p309 describes physical space as being defined by co-existence through the simultaneity of the existence of two or more objects and the distance that exists between them, and his idea of co-existence infers the existence of the relationship between objects in the same temporal dimension. Movement or displacement defines the relationship of the objective space, and transition between states becomes an essential component for the constitution of change. Therefore, to understand physical space it is necessary to pay cognisance to the co-presence of things and persons in space as expressed by Merleau-Ponty (1945), Goffman (1959, 1990), and Giddens (1984), and to adopt methods *'that analyse not things in space, but space itself with a view to uncovering the social relationships embedded in it'* Lefebvre (1974,1984) *p 89.*

[15] Forty (2000) mentions Gottfried Semper, Berlage and Behrens as the originators and developers of this view of architecture.

[16] According to Forty (2000) this is quite evident in the work of the Dutch de stijl group, the Bauhaus group around El Lissitsky and Moholy- Nagy.

For Lefebvre (1974,1984), there is no sectioning between physical, social and mental space in reality. The different kinds of spaces are about an unlimited multiplicity of social spaces that often interpenetrate one another, although visible boundaries such as walls give an appearance of separation. His main thesis about space is that the two kinds of space that he terms *ideal* (geometric and mental) space, and *real* space (the space of social practice), are intertwined, occasionally conflicting each other but do not exist independent of each other[17]. The importance of the physicality of dwellings of the home in relation to the social and metaphysical dimension is also given credence by Bachelard (1964) who highlights the importance of the home as a geometric object with visible solid reality, but whose significance transcends its framework that organises space as a system of spatial connections and relations. It is in this context of the multiplicity and interconnection of space as physical, social, and mental, that we proceed in this study.

2.2.1 Space Syntax

The decision to utilise space syntax theories for analysing physical space was a result of the following. While many spatial studies focus on the architectural form, geometric qualities, or on biological analogies particularly in explaining the design process, few provide a means of objectively assessing and comparing a set of buildings. Other studies based on cognitive and semiotic models tend to deal more with the (human) subject and perception of space and how space operates as a system of signs and symbols and though providing valuable insight on mental space, they tend to ignore physical space as a social entity. As a result, the decision was made to adopt theories and methods that study physical space in the light of the preceding discussions.

[17] Lefebvre (1974, 1991) cites spatial terms of everyday use such as 'room', 'marketplace' shopping or cultural 'centre' public 'place' that in general, also describe a social space as examples of overlapping of different kinds of space.

Hillier's (1996a) and Hillier and Hanson's (1984) theory and methodologies were adopted because they focus on space as a primary element of buildings rather than as a by-product of the building process. Their work draws the above ideas together; that space is a direct expression of social relations through configuration, and its key focus being permeability and co-presence. Space they argue, is a distinct system of social behaviour and the primary nature of the built environment is configurational, *'principally because it is through spatial configuration that the social purposes for which the built environment is created are expressed'* Hillier (1996a) p 92. Physical space, when it is bounded space, is a kind of 'artefact' that according to Hillier and Hanson (1984) is both functional and meaningful; a practical utility that is invested with social purpose, and the main object of analysis is the two-dimensional floor plan [also see Bafna (2003)].

In the theory, the configuration of space is simply explained as the nature of connections/permeability between two spaces or cells as considered via the existence of a third space. It maintains that the real significance of the built form is to be found in analysing the whole of the domestic space as a 'system' whereby change in a small aspect e.g. the removal of a single connection between two spaces can be shown to have repercussions on the configuration of the whole complex. This basic relation of interconnectedness between two spaces according to Hillier & Hanson (1984) is a fundamental relationship in the analysis of the built environment.

A space is described as being one step away when spaces are directly accessible from each other, and each intervening number of spaces that separates two spaces that one has to pass through in order to go from the first room to the other, increases the number of steps or depth. A typical floor plan is shown in Figure 2-1, p46 with all spaces that are at the same step/depth from the outside world (space no. 14) arranged

on the same level in the justified graph. Each space is represented as a circle in the justified graph with connections between spaces represented as lines connecting the circles. The potential for minor changes to have this kind of repercussions may result in what Hillier and Hanson (1984) describe as a symmetrical relationship between spaces when direct reciprocal (access) relationships exists between the spaces in question, or tend towards asymmetrical relationships where access between two spaces is indirect, involving mediation by other space(s). This symmetry/asymmetry tendency is a unique characteristic inherent in the configuration of any plan.

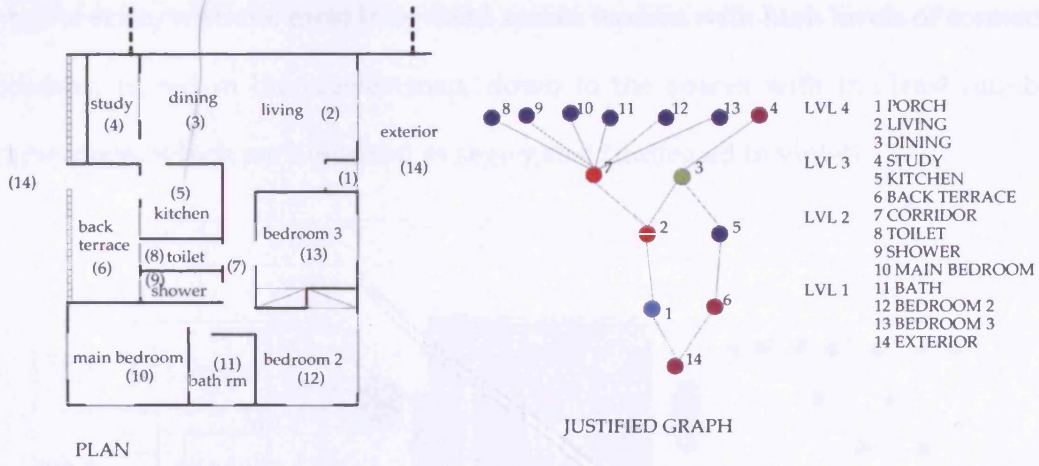


Figure 2-1: Example of floor plan and its justified graph

A second characteristic of the relationship between interior spaces identified in space syntax is the existence of one or more locus of control. Empirical research based on space syntax has shown in some situations, that a few spaces exert strong control over other spaces in the plan. Where access between several other spaces is controlled by a few spaces, there are very few options in movement patterns. Alternatively, other plans manifest greater choice of independent routes with few/no space exercising strong control in the system. They describe this aspect of spatial relationship as the extent of

distributedness (more route/ringy choice) and *non-distributedness* (fewer route/tree-like choice and higher control by a few spaces) in a (domestic) system.

A series of space syntax techniques were developed to express the connections/ permeability patterns of a two-dimensional plan as an abstraction in graph form (justified graph) shown in Figure 2-1. The process involves identifying fewest and widest distinct convex spaces on the floor plan, and establishing doorways, and other openings that allow thro-movement between spaces. This form of representation is called a *convex break-up map (see* Figure 2-2, p44). The convex map is graduated on an 8-interval scale, with the most integrated spaces (spaces with high levels of connectivity) indicated in red in the convex map, down to the spaces with the least numbers of connections, which are described as segregated (indicated in violet).

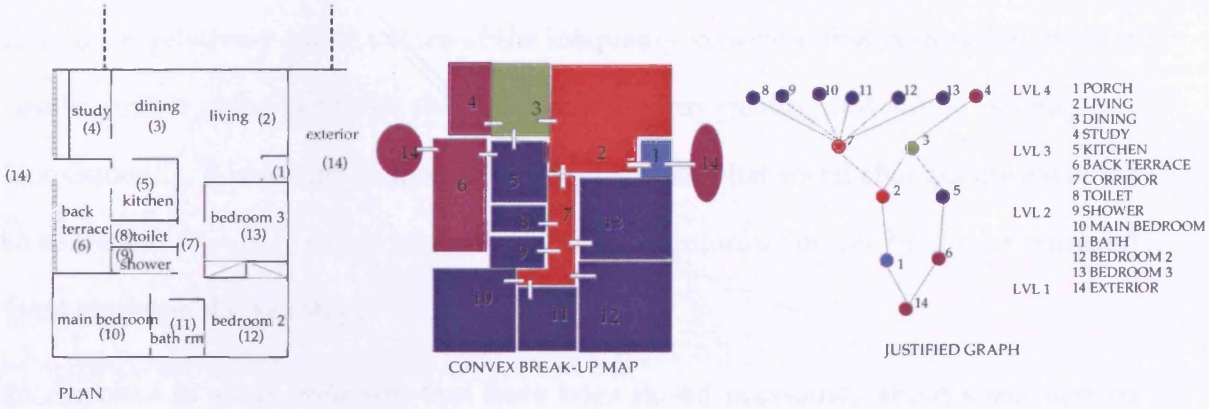


Figure 2-2: Example of floor plan, convex map and justified graph[18]

The connectivity pattern between all spaces in a system is analysed mathematically to provide a measure- the *integration value*- that captures non-local properties of spaces critical to the movement dynamics and potential of a system [Hillier (1999a)]. Integration provides a means of comparing different functions within the same plan or across different floor plans in a precise manner. The techniques and measures associated with

[18] Note that the system is usually represented as operates from the outside world as is shown in this example but the graph can be utilised to show how the system operates from any of the spaces/cells.

integration that are utilised in this research are explained in more detail in chapter three. The unequal relations or ranking in the way different spaces are connected also results in a tendency for different weightings in the way activities are disposed around the building and each example of the built form expresses a specific pattern of connection, symmetry/asymmetry, choice of movement between the spaces and ranking of key activities that Hillier and Hanson (1984) describe as a phenotype.

Patterns of ranking of integration values for key space functions in individual dwellings have been found to be a culturally potent template that is often recreated regardless of variations in floor plans e.g. Bafna (2001) Monteiro and Hillier (1987); Hanson (1998); Amorim (1999); Bustard (1999); Amorim (2001a); and Taher and Brown (2003), amongst others. It is this template that Hillier and Hanson (1984); Hillier and Graham (1987) refer to as the inequality genotype. Hillier and Leaman (1974) and Glassie (1975) argue that it is in the relatively stable nature of the inequality genotype that cultural knowledge resides and it is the genotype that is adjusted when creating individual phenotypes. Consequently, it is mainly in the pattern of inequality that social changes are executed in space and as such, a substantial amount of social information can be also be retrieved from studying the genotype.

In response to some criticisms that have been raised previously about space syntax: - its lack of focus on the geometry [Ratti (2004], its level of abstraction using only two-dimensional features [Allison (1999), p4], and the need to incorporate more phenomelogical aspects [Seamon (2003)], many recent studies have shown that these are not as critical as they may initially seem. Space syntax measures relational elements of a system rather than properties (e.g. size, distance) because configuration of space is considered a fundamental, but not the sole role of bounded space, and the measures

address this in a consistent manner. As expressed in Hillier (1999a), space syntax seems to account for spatial and functional relationships without direct reference to geometry with high predictability rates [Bafna (2003), Amorim (2001a)]. This Hillier (1999a) claims, is not to say that geometry is not significant; only that the justified graph (and other space syntax methodologies) seems to account certain aspects of geometry (e.g. distance) without expressly measuring it. Some level of abstraction is always required in most methodologies to make discussion and comparison feasible, and the high rates of predictability in empirical conditions with space syntax seem to support this. Space syntax provides a powerful tool in analysing physical space due to its precise measures, and its ability to demonstrate the physical as also being social, and other qualitative analyses can be incorporated into it.

2.2.2 Geometric typing

Certain aspects of the geometrical make-up of physical space were explored independently involving the analyses of the floor plans on the basis of criteria considered to be fundamental aspects of domestic space morphology. This did not constitute a description of every intricately detailed aspect of the plans, but a summation of its generic nature. Van Leusen (1996) highlights that the process of identifying a typology of dwelling arrangements is a potentially powerful way of condensing architectural knowledge and, according to Hodder (1987), such a process of defining similarities depends on perception, but can yield plausible insight by careful consideration of empirical data in relation to theory. The idea of resemblance (or similarity) for Hodder (1987), and Bulmer (1992) is not a property of the thing, but

it is the interaction between the subject and the object that gives the frame of reference (perception), and the identification of similarities that assigns the object into categories. Three main criteria were identified in assessing geometric types in this sample, and these involve concepts whereby differences in the performance of various dwelling types are likely to denote basic differences, how people wish to live. Of key interest was the degree to which certain space labels are kept apart or assembled together in the domestic space- about the degree of separation between spaces like the living and reception areas usually accessible to visitors, the bedrooms, and the service areas such as the kitchen, toilet and bathrooms.

Amorim's (1999, 2001a) theory of the sector paradigm in which he demonstrates from his sample of domestic dwellings from Recife, Brazil, that the houses are organised in distinctive sets of spaces in the form of identifiable sectors – living, service and sleeping sectors- was most useful in a conceptual way. A sector is a set of spaces that are related and grouped according to classificatory procedures based on functional and social requirements. These become 'rules' that influence future changes to configuration. His study, utilising space syntax analyses of integration, revealed that the passage from the colonial to the modern way of living established new ways of space-social meanings[19]. The pre-modern dwellings had three clear sectors- the formal living sector for visitors, the informal living sector for the household use, and the service sector for the food preparation, laundry, storage, stables, slaves and, later, servants.

The modern houses were organised differently whereby the strict gender and racial inequalities perpetuated by the colonial system were weakened to express a lesser degree of inequality in the family. But the main distinguishing feature in the modern houses is the emergence of transition spaces (the mediator sector), which created a buffer

[19] Three house types were analysed: - the pre-modern (colonial house), the eclectic house and the modern house.

between the three sectors. The manner in which the boundaries between sectors are structured become important in a social sense. When the sectors are strongly isolated, then the different users of each can be strictly prescribed, but when these sectors become more permeable, the boundaries and interactions between differing categories of users become less controlled and less prescribed, unless social rules are put in place. The extent of permeability between sectors is measured by a formula defined by Amorim (1999) as the relative connectivity (RC), that is, the number of connections in the j-graph, and the degree of permeability (DP) based on the connectivity between the sectors. Low values of DP indicate clear boundaries between sectors and high control between categories of users, and low RC values indicate a tree-like structure, and few options in movement between spaces.

The generic findings of his study were a) that mediator and service sectors presented a diachronic stability and retained their tree-like nature across the board in time. Mediation was more effective and central in the modern than in the eclectic houses, which manifest as increased DP values (blurred boundaries) in the modern houses, while privacy was reinforced in all the house types. As such, changes in the number of rings are not necessarily about increased social and familial informality according to Amorim (1999), and control via rules remained in the eclectic dwellings as a way of maintaining social inequalities. Although the colonial houses (pre-modern) were the most rigidly programmed, socially controlled, tree-like j-graphs, the eclectic houses were more ringy and offered more flexibility in the layout as a transition between the patriarchal and modern family. The modern house re-establishes the tree-like j-graph with greater spatial depth, whilst offering a degree of informality in the living areas and seclusion for the private areas and is dominated by spatial manifestations, because of

stronger correlations between function and depth. For example the bedroom is quite deep and as such, unlikely to be traversed by visitors. Amorim (2001a) suggests that sectors' organisation is a basic fundamental topological layer of space organisation, because the relative position, connectivity, and permeability between sectors are remarkably stable despite changes within the sectors, but changes to the boundaries of sectors have a fundamental effect on the identity of the domestic types.

Also the introduction of mediators increased the stability of the system, particularly when combined with clear sector boundaries. Sectors eliminate spatial inconsistencies (conflict between different activities and undesirable co-presence) and reinforces spatial likeness which according to Amorim (1999) results in two sector topological genes- one isolated and symmetrical guaranteeing more stability and the other more asymmetric with blurred sector boundaries though introducing more predictability in the j-graphs. One may argue, though, that the boundaries created by the sectors are induced by the space labels which might change if these are reassigned, but the way spaces are configured also creates a determined depth pattern which influences the assignment of functional requirements and social values through which spatial systems acquire a sense of social order.

The discussion of geometric typing here, owes its generic approach as much to the idea of sector paradigm, as it owes to the ideas about shape grammars and description grammars. These concepts were invented by and Gips and Stiny (1975) and have also been explored by Steadman (1983) particularly in relation to aspects of adjacencies between specific domestic functions spaces, and in Colakoglu (2005) describing shape grammars and its role in creating new designs. But we are concerned more with idea of description grammars, which was defined by Stiny to

account for features of the design not covered by investigations about the shape, of dwellings/houses. Description grammars covers a variety of contextual, typological, morphological features, etc, that are considered relevant to the internal arrangement of spaces in the dwelling according to some criteria of interest, which can also evolve/ change. Hietor et. al. (2003) developed the concept of description grammars further in a new framework called discursive grammars similar to Colakoglu (2005) concerned with the generation of syntactically correct new designs, and which comprises a) a programming grammar that is about the user and site data, and b) a designing grammar which is about generating a design, both which comprises a description grammar, and a set of heuristics. The description aspect of the programming grammar comprises a variable dimension – constraints (context, typology, morphology), about the quality of space (functional space capacity, topology, aesthetics) and also fixed aspects such as floor dimensions and sectional dimensions.

Of interest in this study were specific aspects of the grammar- two morphology constraints about the interface between interior and exterior as a threshold issue, and how the inhabitant-visitor interface is resolved within the dwelling. Heitor et. al's (2003) study using paradigm analysis with space syntax analysis revealed some effective regularities in the configuration. These include the separation of the public (living sector) from the private (sleeping and service sectors), which enhanced the separation of visitors from the private areas, the double role of the circulation sector in either maximising or minimising depth, and the strategic location of transition spaces as mediators between sectors, similar to Amorim (2001b). They also identified a consistency between the space syntax sector analysis and the demarcation of functional zones, which can be affected by the shape grammar adopted, and the geometric ambiguity of

the bathroom, which falls either in the sleeping or living zone. This inherent imprint of aspects of geometric formulation within the genotype of a dwelling is also noted in Bafna (2001) study of a sample of Miesan houses and contemporary German houses, identifying that the geometry acts as the medium through which the spatial structure of the house is formulated, despite variations in the arrangements within the clusters or sectors. The concern with the process of geometric typing in this study, was to assess if there are overarching consistencies in the sample similar to those stated above, but it is in a sense also about the generative properties/rules within which individuals make decisions and choices, since grammars are concerned with generative rules, used for the creation or sustenance of routine/patterns identified in the types.

2.3 Social space, habitus, and lifestyle

Even if we accept the idea previously raised that various kinds of space are interlinked, and that physical space has a social dimension, social space is worth defining because it is neither a collection of things, nor an aggregate of sensory data. Munro and Madigan (1999) described the concept of 'home' as embracing a physical and social space; a place of separation between ideals and practice relations, of gender and sex, work and play, and time and space functioning as a means of 'zoning' to resolve conflicts over shared space. In essence the physical space is a place of negotiations of social relations as well as a space of navigation for activities [Tversky (2003)]. For Lefebvre (1974,1984) social space embraces a multitude of intersections, assigning each element with its location, and is both a 'thing', and a process. It has a realm of a) social *relations of reproduction,* that is, the relations between sexes and age groups along with the organisation of the family

and b) *relations of production,* that is, to the division of labour and hierarchy of social functions that manifest as social practices, at the individual level and at an urban level. Social space is highly relevant in that it ensures continuity, some degree of cohesion, implies a given level of competency and performance via repeated enactment of social practices, as it is about change via the manipulation of rules.[20].

Lefebvre (1974,1984) also identifies social space as existing in a *representational space* where it is directly lived through its overt and covert complex levels of symbols defined by inhabitants and users. The triad of spatial practice, representation of space and representational space according to Lefebvre (1974,1984), avoids the reduction of the complexity of social space into oppositions, contrasts, or antagonisms that create 'either or ' situations. His main hypothesis is that each mode of production (or society) has its own particular space, and the shift from one mode of production to another would entail the production of a new 'space' and that examinations of the transitions between modes of production will reveal that a fresh space is generated during such changes[21]

The idea that changes in the mode of production/society will be manifested in transformations of the spatial practices of the region, is arguably a process that is likely to have taken place in Nigeria, in her transition from agrarian through to post -colonial integration into the wider capitalist economy. Although Lefebvre (1974, 1984) does not explain fully how social space is produced in physical space, his ideas on the relational connection between things/spaces, the multiple 'types' of space and, the idea that changes in aspects of society will produce a 'new' physical space, are relevant to the interest in domestic space use and lifestyle.

His ideas about the role of spatial practice in producing and reproducing space are in many ways congruent with Giddens' (1984) theory of *structuration* that identifies

[20] According to Lefebvre (1974,1984), this needs to be evaluated empirically at the individual level.

[21] He identifies class struggles and capitalism as a key component of changes of mode of production particularly in western societies.

routinized spatial practices as the means by which social practices are organised through space and time. This raises the age-old sociological concern of the role of structure (the collective practices) emergent from a group/society, and the phenomelogical issues of individual behaviour and the reasons and meanings behind individual choices. Giddens (1984) defines structuration as the conditions governing the continuity or transmutation of structures (objective regularities) by the continuity of practices, resulting in the reproduction of social systems in situations of human interactions.

Structure in structuration, is defined as rules and resources that are drawn upon in the production and reproduction of social action[22] and are generic sets of transformation relations that constitute meaning and are organised as properties of social systems that seem to continue beyond individual patterns although created by human action. According to Giddens (1984) it is the duality of structure that enables the structural properties of social systems to be both medium and outcome of the practices they recursively organise. The importance of the routinized character of daily activities in the reproduction of institutionalised practices particularly in the domestic environment is also strongly emphasised in Goffman (1959).

Social space for Bourdieu (1984) is also multi-dimensional, comprising acquired and inherited social, economic and cultural capital and this set of useable resources and power plays a significant role in the realm of perception. For him, the question of how social space is constructed is about the volume of capital, the composition of the capital (the proportions of the three types of capital that is present in the individual), and how the volume and composition of capital change over time. These forms of capital according to Bourdieu (1984) are reproduced primarily via inheritance law and custom, the labour market, the educational system, etc, which depend on power relations

[22] *System* describes reproduced relations between actors or collectives are organised as regular social practices and reproduced across space & time.

between classes. Generally, increased schooling has the effect of increasing cultural capital and in the case of this thesis, also of increasing economic capital. According to Portes (2000), Bourdieu's main contribution to the discussion about social space is that these forms of capital can and are traded for each other and that the system is actually reliant on such trades for development. He states that it is rare for social capital to be acquired without the investment of material resources and the possession of some cultural knowledge, enabling the individual to establish relations with others, which has been the case in Yoruba history outlined in chapter three. For Bourdieu (1984), individual choice is very much driven by social class, which is also manifested in the chosen occupations, which he demonstrates in his study on the judgement of taste. He highlights the difficulty in escaping from the various forms of capital in ascribing meaning to situations and objects, stating that choices always owe part of their value to the value of the chooser, which are rarely free from social and cultural capital.

Nash (2003) and Shiltz (1982) both consider Bourdieu's idea of habitus as an attempt to mediate between agency and structure, which seek to explain the reproduction of social continuities. Bourdieu's definition of habitus as the mediator between structure and practice, functions thus as a generative scheme of a) classifiable practices, and b) of perception and appreciation (objectively classifiable judgements), in which social structures become embedded via a process of socialization. It is the relationship between these two according to Bourdieu (1984), which defines the habitus and the capacity to reproduce the *lifestyle* or system of classified and classifying practices that are the distinctive signs of underlying structures. The socialization process is about the practical mastery of the world, and a knowledge of the rules of a given realm of practice that reflect an objectively identifiable conditions of existence (class conditionings) and

also the position in structure of these conditions of existence. The social space therefore is the realm in which the daily activities demonstrates the balance that each person/ household has struck between how people might want to live and the limitations of the physical space. It is the site whereby lifestyles are manifest as the physical manifestation of what are ultimately abstract personal and social values.

Brunso et. al (2004) tried to operationalise in a Bourdieu sense, how lifestyles actually relate to values and the habitus/disposition, and identified an indirect relationship between personal values and its aggregation, lifestyle and the observable behaviours based on their study of food-related lifestyle choices. They demonstrated the existence of stable behaviour and value differences between how people shop, cook, consume and purchase and importance attached to quality aspects of food. They defined personal values as abstract and trans-situationally aggregated cognitive categories, which are learned, and as such have a collective dimension by virtue of being based on information accumulated from the outside community. They advocate a top-down perspective in analysing the effect of values on observable patterns (lifestyle), based on the knowledge structure of categories, concepts, and associative networks that guide goal-oriented action. This, they claim, has an advantage over a bottom-up perspective, and relates to an individual's response to an incoming stimulus via a knowledge base, which guides a comprehension process. This is achieved by attaching meaning to an object and deciding on the appropriate reaction based on procedural knowledge and personal values, and adapted to the situational constraints.

Their hypothesis was that there are likely to be stable differences in the choice of subordinate goals and behaviour that are necessary to accomplish super-ordinate (macro-level) goals. They considered that stable differences in behaviour routines and

subordinate goals should point at stable differences in the super-ordinate goals. As such, they concluded that, lifestyle is a system of individual differences in the habitual use of certain declarative, and procedural knowledge structures on both routes (top-down and bottom-up). Lifestyle as a construct intervenes between abstract goals and the situation-specific product perceptions, behaviours, and intervening knowledge structures, necessary for both information-processing routes to reach their end.

This results compares in some respects to Van Eijck and Bargeman (2004) who analysed data from over 12,000 Dutch respondents gathered between 1980-2000 and identified that social categorisations based on cultural socialization (education and age) had become more relevant lifestyle predictors, while categorisations based on economic resources (income) and gender were losing their impact. Education is very important according to Van Eijck and Bargeman (2004) and Van Eijck (1999), because it is often a proxy for cultural capital, and they argue that cultural capital is becoming increasingly important for lifestyle formation, and can compensate for weakening economic and gender related barriers. They found that preferences were less driven by (money) scarcity or coercion, but more by socialization and persuasion, and that social background is not becoming less relevant but exerts its influences via other channels. The effects of socio-economic issues on domestic lifestyle choices are also outlined in Bittman and Wajcman (2000), Wilson and MacKenzie (2000), and Peterson and Kern (1996).

Income was also a strong predictor of certain spatial patterns in the Ile-Ife sample because of a strong positive correlation between income and education, whilst age and gender were more influential on the paticipation in household chores and domesticity as will be seen in subsequent chapters.

2.4 Meaning in the domestic realm- Activities and Objects.

Social space is where the relationship between activities is conceived but physical space is the place of manifestation [Tversky (2003)], though as mentioned, social relations are also manifest in the very configuration of the space labels. Activities take place in a time frame and almost always involve physical co-presence and interaction between people, though occasionally, it is simply mental as in the case of reverie or daydreaming[23]. All (domestic) activities with the exception of mental activities, involve aspects of material culture that serve, in part, to structure the social context through human agency and tend in many cases, to have an inherent chronological sequence (e.g. food preparation/ cooking/eating or laundry/ironing) suggesting a reliance on spatial contiguity.

There is a strong connection between activities and objects because in both instances, space is the main element being utilised. Kent (1990) and Rapoport (1990) argue that activities are an aspect of culture most likely to influence the use of space and that, in addition, it is the patterning of activities that is crucial and not the single activity reconstructions. This idea is similar to Bulmer's (1992) development of James Hill's ideas of the 'laws' of mental association. This was an approach for identifying connections or similarities between objects based on three basic principles – a) contiguity in time and place, b) causation and c) resemblance[24].

He defines contiguity 'in time' as the successive order of certain domestic activities and which help in establishing a 'belonging' to the same set, in a similar vein to (Douglas, 1991), and contiguity 'in place' as pointing towards synchronous order. Where this occurs together, a strong link is established and in many instances causation and/or resemblance can be argued.

[23] The extent to which reverie and daydreaming are activities is debatable but we will return to the issue of what constitutes domestic activity at a later point.

[24] Bulmer R. (1992) quotes Hill J. particularly in terms of recognising ordering principles of similarity between objects and I add by extension to activities.

The importance of the context in analysing meanings attached to domestic activities was emphasised by Hodder (1987) in describing the environmental and behavioural context as *'the structure of meaning into which objects have to be placed in order to be interpreted'*. Meanings attributed to activities and objects do not exist in isolation, but are part of the social domain of the extended kin and community, and are likely to be strongly influenced by social influence. This in turn according to Oldmeadow et al (2003), is likely to be affected by considerations of status, (which impacts by differentiation), and group membership, that originates from a position of self-categorisation in generating perceptions of similarity. Self-categorisation and status influence identity via people's self-concepts, which consist of their own unique identities as well as shared social-identities- attitudes, beliefs, and perceptions. The influence of social identity on meanings gave added weight to the decision to analyse the reasons and motives of the inhabitants about their space use patterns.

Kent (1990) explores some ideas about the connection between mode of production, the relationships between domestic activities, and how they are manifested spatially. Her thesis is that the greater the degree of socio-political complexity, the higher the ratio of functional restriction, the higher the level of compartmentalisation of the architecture (use of solid walls), and the greater the level of functional homogeneity within each compartment. This idea, though, may not hold consistently and is suggestive of the idea of a hierarchy of cultures although her ideas about the role of temporal separation are more viable. She claims that spaces that appear to be multi-functional or multi-purpose only appear to be so, because of minute time intervals that cannot usually be distinguished. She describes the effect on the physical space as either a) functional restriction (*specialised*) or generic functions (*non-specialised*), and that different cultures

are likely to reflect differences in the sequential use of public space (this is also highly probable in domestic space). In addition, different methods of classifying activities into sets and further distinctions may also exist such as ethnicity, gender and age.

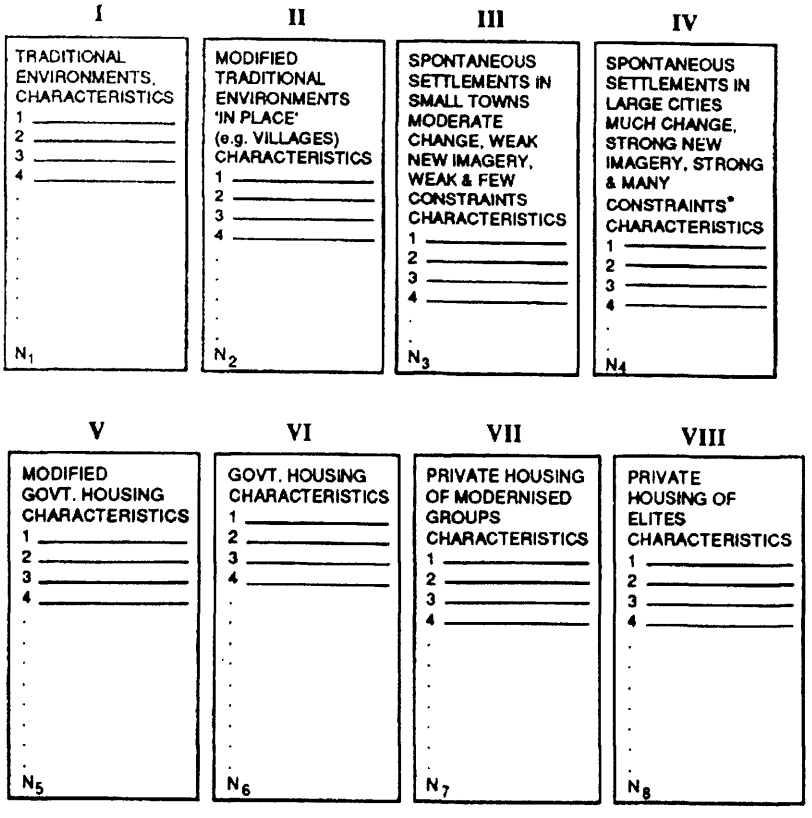
Rapoport (1990) supports the concept of the connection between socio-political complexity and increased compartmentalisation and functional restriction of space. He states that variations to settings of activities- made up of the physical space, the semi-fixed elements and the temporal component- can lead to changes in the types and numbers of activities in each space resulting in some spaces being either highly differentiated or undifferentiated (similar to Kent's idea of specialisation and non-specialisation). He also claims that many activities may change location in relation to the inside/outside distinction, from one culture to another – suggestive of changes in meaning.

Rapoport and Hardie (1991) outline a succinct method by which cultural change, and its impact on the built environment and space use patterns in traditional and modern housing, particularly in developing countries, can be analysed. They propose that the main objective ought to be identifying the 'core elements' of the traditional environment, the peripheral elements (those that are becoming less prevalent) and the new, (identifable by their absence from the traditional dwellings and way of life), noting that traditional elements can persist in transformed aspects of the dwelling. Their premise is that culture change is likely to be a synthesis of certain core elements which remain socially relevant, and the highly valued elements of the new, whilst recognising the potential for significant diversity even within a single area. They emphasise the need to identify the groups to be analysed clearly, taking into consideration differences between the groups, that is, differences in lifestyle, social organisation, values, and behavior, and secondly

the rate of change. Rapoport and Hardie (1991) also state the need to identify what is being supported - activity systems, social units, kinship structures, rituals, language, food habits, and the economic, recreational, or governing institutions of the culture. The group's characteristics in these respects, constitutes the *'culture core'* of the group, that is, aspects considered vital to continuity.

The means of supporting the culture core is via its physical settings, that is, the fixed and semi-fixed features, including the dwelling itself. Also, investigating where important activites occur around the physical settings is vital, in that these can be counter-intutitive, and can reveal significant information about core cultural elements. They propose a progression of analysis from the traditional (physical, social, etc), the modified traditional, and the modern environment, which often translates into changes in the proportions of the old and new characteristics, between environments (see table 2-1).

Table 2-1: Rapoport and Hardie (1991) core characteristics in the traditional and modern environment



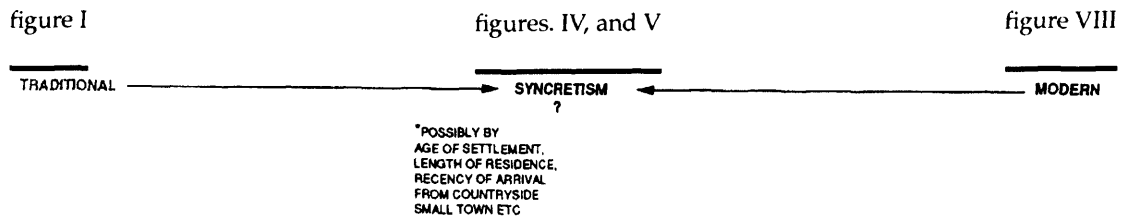


Figure 3.4 Identifying the characteristics of environments ranging from traditional to modern
Source: Based on Rapoport (1983a: fig. 7, p. 262).

Rapoport and Hardie (1991) tested the process on a small sample in one settlement in current day Botswana, in Mmabatho (Mafikeng),which contained eight different settlement types, corresponding to all the eight categories in table 2-1, using door to door interviews of ninety-two households. They covered a wide range of topics including the features of the house and plot, what the inhabitants/occupants liked or disliked, the places used for socialising and eating, where they shopped, societies or groups that they belonged too, home ownership, and users' concepts about the ideal home type. They also prepared a free-hand sketch of the dwelling and plot, and an inventory of all household objects. Their results show that the house has become more articulated internally, the yard is less dominant for activities, and there has been a rise in the garden concept in the new types, in addition to differences in privacy concerns. Sleeping arrangements based on age and sex, and the use of communal social spaces, were common in the traditional houses, but quite lacking in the modern houses. The traditional examples in most cases showed a clear sense of which activities were acceptable in the front and back yards, and this was consistent across house types.

The results of the Botswana study demonstrate the usefulness of the approach in dealing with cutural change, and also revealed that some core elements of the traditional houses are expressed in all areas. As a result, this research outlines the core characteristics of

the traditional orowa house prior to discussing the peripheral and new elements found in the new dwelling types, some of which are similar to the results of the Botswana study, in the subsequent chapters on spatial and social rules and meaning.

Syntactic measures of integration and depth have also been used to assess aspects of meanings attached to domestic activities in Monteiro and Hillier (1987) and Monteiro (1997). Monteiro, (1997) utilised space syntax analysis to analyse one hundred and one floor plans from Recife, Brazil, in combination with a subjective data gathering technique (Multiple Sorting Procedure). The sample was drawn from three socio-economic groups ranging from very low-income earners living in single room dwellings (favelas) to middle-class workers and professionals living in detached houses. The multiple sorting procedure consisted of asking interviewees to list their own daily activities (see Table 2-2, p63) and the use of the spaces in their dwelling and then, to classify the activities several times to understand how they perceived each activity[25].

The sorting concepts revealed some interesting things about some activities: - for instance, much of the survey population considered 'watching t.v.' an interactive leisure activity rather than a passive one, indicating that the same activity can have different meanings within different cultures. Her main innovation was to use integration and depth to map activities, so that each activity reflected the integration and depth value of the space in which it took place. The results also showed clear bandings of integration and depth values of distinct activities, which was related to some extent to the activity classifications developed from the respondent's sorting concepts.

[25] They were asked to sort the activities in such a way that each group had 'similar' activities and was quite different to the other groups. They were also asked to group spaces in the home. They were then asked to explain concepts underlying their grouping.

Table 2-2: Monteiro (1997) inventory of domestic activities classification

Table 1

Household Chores	*Passive leisure*	*Private needs*
ironing	watching TV	washing the face
cooking	reading	taking a bath
washing up	listening to music	sleeping
washing clothes	studying	resting
	dating	making love
Extended chores	*Interactive leisure*	*Communal needs*
shopping	chatting	having a coffee
working	meeting friends	having lunch
playing with children	drinking beer	dining
doing special tasks	going for a stroll	

In Monteiro's, (1997) sample, personal needs, as expected, were more segregated and communal needs and interactive leisure activities generally more integrated, but there were some differences in the mean integration and depth of the activities in the 4 dwelling types surveyed[26]. The favela was strongly integrated by cooking and some other domestic chores, compared with the public housing flats where an interactive leisure and communal need activity were the most integrated[27]. The situation in the middle class flats and houses was similar to the public housing flats. Domestic chores were more spatially integrated in the middle-class flats than in the public housing flats. The correlation between integration and depth values was lowest in the favelas (for example cooking was relatively deep though highly integrated), but strong in the public housing and the middle-class flats, indicating that the structure of the plans is a strong determinant of functional arrangements. The middle-class houses were in-between.

She also identified that some activities were *'rooted'* within defined rooms/boundaries with little variation in location across the sample, probably a result of the need for special furniture and equipment (e.g. cooking in the kitchen and bathing in the bathrooms).

[26] The dwelling types are one-room favelas, public low-cost housing, middle-class flats and middle-class detached houses)

[27] Domestic chores were at an intermediate level and personal needs were most segregated in the public housing flats.

Other activities were quite *'loose'* taking place in a variety of locations and occurring with a host of other activities. The loose activities were considered by Monteiro, (1997) to be most revealing, in that they revealed the kinds of 'status' accorded to these activities, due to their location. This manner of spatial analysis was explored in this study, and was also extended to domestic objects.

Domestic Objects on the other hand are usually selected by the inhabitant(s) as being meaningful for a variety of reasons: – direct functional utility, sentiment, or/and for semantic purposes of a personal or social nature that demonstrates the permanence of the intimate life of the individual. In essence, objects are one of the principal ways by which human interactions in the domestic space are manifested in physical space as part of settings. This does not presuppose that the presence of an object means that an activity takes place in the space, but that the presence of an object alludes to real or aspired possibilities of related activities, within or adjacent to the dwelling. The value accorded to an object impinges on decisions about its location: - whether to place it shallow or deep in the domestic complex, to allow or forbid access to non-inhabitants that is, to display or hide them. For Bachelard (1964), and Korosec-Serfaty (1985), domestic space is essentially about these decisions on secrecy and visibility. Some cherished objects are on display for their inherent characteristics or the projection of ideas or prowess, while others are hidden away for private enjoyment. Conversely, objects that are considered more prosaic, for classificatory reasons such as whether they are considered smart or untidy, clean or dirty may also be kept out of sight rather than be displayed[28].

[28] These classificatory, and usually binary oppositions are to a significant extent culturally determined and reflect structure in its more restraining role.

Household objects (as opposed to objects belonging to the public realm), constitutes what Csikszentmihalyi & Rochberg-Halton (1981) describe as an ecology[29] of 'signs' that reflect and shape the pattern of the owner's self. Their research on symbolic domestic objects (as mentioned in the introduction), focussed on three generations/ age-groups in two areas in Chicago of similar social standing, to reveal how the respondents related to domestic objects as symbols. Csikszentmihalyi & Rochberg-Halton (1981) and Hodder (1987) state that the polysemous meanings of objects can be difficult to separate, hence difficult to ascertain how they relate to lifestyles. This is often the case of objects with a strongly utilitarian significance as it can be difficult to separate use-related functions from more symbolic meanings. For example, in the study area (Ile-Ife) running water, and electrical appliances have an obvious functionality but were not easily accessible to parts of my sample, therefore, were sometimes seen as symbols of a 'better standard' by those for whom such items are not easily accessible. Csikzentmihalyi and Rochberg-Halton (1981) elaborate on how objects can function as symbols through interaction with human agency, creating extrinsic aspects of objects that assist in creating 'meaning' in objects by mediating conflicts within the self, or represent traits of the self and the power to affect others[30].

Objects can be aspirational, speaking about what could be, as well as what is. Objects can also act as signs of status- expressing respect, wealth, political power, talent or physical prowess- and the choice of status objectscan be based on their rarity, expensiveness, age, and ability to attract the attention of people who have status.[31] Finally, objects can be symbols of social integration- of the extended self, serving as a sign of unity, and shared heritage and also distinguishing the group from others around it.

[29] Here ecology literally means the study of households.
[30] Csikszentmihalyi & Rochberg-Halton (1981) mentioned that gender differences sometimes occur in the power form expressed in objects. In men, power tends to be synonymous with virtues such as strength, bravery, prowess, endurance and for women with virtues such as seductiveness, fertility and nurturance. They also identified distinct family types- some families were more interested in the non-self orientation, integrative qualities of objects, while others were the opposite. While the idea of typing families is debatable, it is not unlikely that generic social inclinations of families are likely to manifest in the objects around them.

The results of their research indicated some differences in the objects relevant to the three age-groups/generations and to gender. The young generation were more focussed on objects requiring dynamic interaction by the subject, while the older group were more 'connected' to objects with a more contemplative dimension to their meaning. This is opposed to the structuralist approach evident in Douglas and Isherwood (1979), and Sahlins (1972), that meaning is an emergent property of systematic relations of differences, that reflect a universal system of meanings that bear a symmetric relation to people and objects, and ignores the individual's role in meaning creation.

Richins' (1994a) and Rogan's (1998) distinction between the *'public'* and *'private'* aspects of meanings embedded in domestic objects was significantly valuable. Richins (1994a) and Rogan (1998) describe public meanings as 'subjective meanings' assigned to an object by outside observers, that is, by members of society at large. The origin of shared public meanings is described in Richins (1994a) as emerging through socialization and participation in shared activities, reinforced through social interaction, resulting in individuals of similar cultural experiences having considerable similarity in meanings attached to these object-symbols similar to Bourdieu's position. Hence, one could expect strong convergence in the reasons expressed by respondents in this study, particularly for objects considered 'special' to many. While the public meanings of some goods may be stable over time, others are dynamic, reflecting changes in popular perceptions.

Private meanings are defined as the sum of subjective meanings ascribed by the owner of the object that identifies with the singular object developed in use, that is, with what Kleine and Baker (2004) described as the psychological appropriation of the object and not with the typology of the object-at-large. Such meanings may include elements of the object's public meanings, but critically the owner's history plays a key role.

[31] Money is the most abstract form of status and what gives it its value and status is the fact that people agree on its worth. It confers status indirectly because those who own money can control other peoples 'objectified psychic energy' e.g. as employers of manpower.

Richins (1994a), and others like Dittmar (1992) argue that it is a combination of a possession's private and public meanings that give it value to the individual, combining several dimensions of meaning e.g. utility, enjoyment, representation of interpersonal ties, and identity. Richins (1994a) also found that the same dimension may show up in the public and private meaning of an object, but some aspects were more likely in the public meaning, while others emerged more in private meanings. Also, some goods were dominated by public meanings and others by private meanings, that is, some objects are more limited in the variety of meanings they convey. Overall, trying to understand social meaning imbued in space, the differences that exist between space labels or dwelling types and how these reflect different value systems, involved looking closely at how spatial identities are defined by activities and objects, and utilising a number of concepts about the social classification of space.

2.5 Social Identity of Space labels

To this effect Bernstein's (1971,1973) *classification* and *framing* concepts developed in educational pedagogy, were considered relevant because although dealing primarily with the transmission of formal knowledge within different types of schooling environments in two social groups, he makes the link between the concepts and the modalities of the control of object grouping and location. The two concepts attempt to specify the nature of the rules used in producing legitimate meanings that are of a tacit form, and relate to the strength of boundary that can exist between the contents of each space label, in combination with the degree of flexibility in the types of relationships that objects enter into with other objects around the domestic space. Classification, is defined by Bernstein as the degree of the differentiation (boundary maintenance)

between the contents of different object arrays in different rooms. Where the strength of the boundary (or rules of exclusion) is strong, there is greater differentiation between the object arrays in each space label and the opposite is true when the strength of the boundary is weak. Framing is defined as the extent to which objects in an array can enter into relationships with each other. Where there are strong frames, very few types of relationships exist and the predictability of the types of relationship is high. The opposite holds for weak framing, where the object array may be found in different relationships between households, and may change their relationship in the same array over time. These ideas are of interest because they relate to Kent's (1990) ideas about specialisation of space, and also to Hanson's (1998) concepts of domestic space codes- visibility/permeability, insulation/sequencing and categoric differentiation/relative position- which look at how spaces acquire social identities in the domestic domain.

2.6 Summary

Physical space and its configuration conveys social meaning via the kind of ranking attributed to the activities in each space, as well as meanings expressed about objects in each space label. Social space is not independent of physical space but exists in tandem, and the inequality that is built into respective space labels has the ability to increase, or lower the status of any activity or object found in it and these can find their way into private meanings and also into public meanings. None of these interactions exist in isolation, as they are influenced by the perception induced by personal values created from social identity, thereby reproducing a specific way of life. This approach, informs the process by which the consonance between spatial types, meaning, and lifestyle patterns are addressed in this research.

Chapter 3: Background to study area

Ile-Ife is translated as 'the house of love or the place of dispersion' – *various sources.*

This chapter outlines core social and spatial characteristics of traditional life in Ile-Ife. This in terms of lineage organisation & family structure, land tenure, occupations, gender and generational roles, and the effect on domestic space use. This is followed by an introduction to contemporary Yoruba society, and a description of its core characteristics in comparison.

3.1 The Study Area

Ile-Ife's mix of traditional and newer housing examples, its unique position in Yoruba mythology, and the presence of the University from 1967 onwards, with numerous examples of architect-designed staff housing made it suitable for investigating the research questions. Yoruba land historically consisted of kingdoms with reasonably clear (but sometimes contested) boundaries in a 'system' of large towns, although Ile-Ife was relatively small[32]. Few direct written references about the Yoruba exist prior to the middle 19th century, but first hand written information was available from Lander (1830), and from Leo Frobenius (1912), who visited Ile-Ife's sacred groves and shrines between 1910-1911. Information about Ile-Ife's history also draws on oral tradition and literature, ceremonies and rituals.

Two versions about the origins of the Yoruba prevail in oral tradition. The first is a 'genesis' legend recorded by Johnson (1921), Flint (1966), Smith (1969), and Lloyd (1971), amongst others, which describes Ile-Ife as where Oduduwa, God's son landed when he descended to create the earth. He became Ife's first deity King and his descendants became the rulers of other Yoruba towns with crowned rulers.

[32] Old Oyo town had a population of 72,133 although total population reported was more than double this figure as Oyo indegenes living away from the city were counted in the 1952 census
Abeokuta had a population of 84,451 in 1952 census.
Ibadan which is the second largest Yoruba city today, had a population of 459,196 in 1952 census,
Ile-Ife in 1937 had a population of about 27,000 (Bascom W. (1951) which is relatively small in comparison with other Yoruba kingdoms at the time and a population of 110,790 in the 1952 census. Source of 1952 census data was [Bascom (1962)].

[33] According to Law (1973), writers such as Duarte Pacheco Pereira (probably between 1505 – 1508), De Barros in the early 15th century, and the Dutch writer Olfert Dapper (1668) made general reference to the region.

The other version puts Ile-Ife's founder- Oduduwa's origin in Mecca, Saudi Arabia, but in both versions, Ile-Ife is viewed as the spiritual origin of Yorubas in Nigeria, Republic of Benin, and those in Diaspora (in Brazil, Cuba, and Sierra Leone). Willett (1968) suggested that Ile-Ife's current site may have been in occupation by 10th Century A.D. but in any event, Ile-Ife was a centre of artistic excellence by the 12th century, by which time Yoruba land had several urban settlements characterised by outstanding political phenomena, divine kings, and internal trade[34] [Smith (1969)]. Ile-Ife benefited from the 'origin' concept, which forbade its attack by other Yoruba Kingdoms, providing relative stability and preserving many traditional dwellings.

3.2 Urban and domestic space use in Traditional Ile-Ife

Archaeological excavations at Ile-Ife revealed a system of two walls Usman (2004), dated between 960 A.D. and 1160 A.D. with gates at the four cardinal points enclosing dwellings and small farms, symbolising Ile-Ife's security, social cohesiveness, and resource surplus. Yoruba towns were possibly originally of radial layouts, and remnants of radial routes can be found in Ile-Ife in conjunction with newer grid layouts. The King's Palace (afin), the main Market (Oja'ba) and Square, and several religious shrines and groves were in the town centre on key radial routes that still connects contemporary Ile-Ife to other Yoruba towns/cities (Ilesha, Ibadan and Ondo). Outskirts farmland (*Oko etile*) about 4-5miles surrounded the traditional town outside the town walls, with inhabitants (farmers) who commuted between *oko etile* and the town dwellings. Beyond this, about 5 miles from the town were large bush farms (*oko egan*) with permanent farming residents, who count their family allegiance with their lineage in the town.

[34] Certain reasons have been postulated by various writers [(Smith (1969) and Falola and Adebayo (2000)] as influencing the development of urbanised society in the forest zone amongst the Yoruba in comparison to other parts of the continent. These include a) The presence of suitable indigenous crops (yams, kola tree, oil palm etc) and metal tools, b) Trade between the forest kingdom and the savannah peoples and subsequently with European traders (initially this was mainly the Portuguese), c) The influence of the states of west Sudan,
d) The influence of the Mediterranean and near eastern world through the trans-Sahara trade, and
e) The relative security along trade routes coupled with specialisation in agriculture and crafts.

Figure 3-1: Ile-Ife location map

Figure 3-2: Examples of famous sculptures from Ile-Ife[35]

[35] the Oduduwa head (image 1), and Oranmiyan staff comprising of a monolithic granite stone (image 2). source of image 1: www.greatestcities.com and source of image 2: metmuseum.org

source of base map: S. R. Akinola, Urban and Regional Planning Department. Obafemi Awolowo University. Ile-Ife. 1997

Figure 3-3: Ile-Ife's radial and grid routes, and the sample areas

3.2.1 Social, economic and political characteristics of traditional Ile-Ife

The extended family, not the nuclear family, was the unit of societal organization and each extended family lived on jointly owned land usually in adjoining compounds; called *Agbo ile*, literarily translated as 'a flock of dwellings'. The *Agbo'le* is a spatial expression of the extended family with an average of 100-200 residents based on people of agnatic descent of three to four generations living together. Agbo'le membership sometimes included adopted slaves, relatives of wives and friends, in addition to residents who shuttled between the farmland and the town. Farming was the main occupation, and land for farming and building was part of the general wealth of an extended family and allocation for individual use was by the compound head. The *agbo'le* was the basis of discharging civil responsibility, military service, taxation and tribute to the king, although individual taxation on goods sales was independent of this. A cluster of compounds was grouped into a 'quarter' headed by a chief responsible for administration, religious and jurisdictional issues, who reported directly to the king of Ile-Ife.

3.2.1.1 Social Stratification in traditional Ile-Ife

According to Imoagene (1992), and Falola and Adebayo (2000), failure to distinguish between class structure and class-consciousness when discussing social stratification in an African context, leads to a wrong conclusion about the class-less character of African societies found in some studies. While they agree that economic category is a significant aspect of class structure, they argue that class structure can exist without a consciousness or intellectual activity manifested in the ability to express specific interests, and to confront opposing interest to preserve one's class.

Falola and Adebayo (2000) contend that class structure in the African situation is better discussed in terms of social distance between communities/classes (and an awareness of this distance) that creates a sense of status sustained by economic, political or ecclesiastical power, which stratifies the society. They state that social stratification has always existed among the Yorubas, based on a complex balance of ascription and political/economic achievement[35], but the key difference from other class societies, is that there is social contact across classes, and the absence of an intervening middle class. Although there is strong emphasis on age as a means of accessing authority and obligation particularly at the domestic level, Yoruba society had emerged a class structure consisting of a) the king & princes, b) the chiefs & nobles; with religious and political power, and c) freeborn citizenry and d) slaves. Bascom (1951) identified nine strata of social class in le-Ife, which Falola and Adebayo (2000) summarised as: -

1. *The King (Ooni) and the princely families*
2. *The Modewa clans from which the palace & town chiefs are chosen*
3. *The Priestly families/clans*
4. *The freeborn or Ife towns-people*
5. *The palace officials, slaves, messengers and other functionaries*
6. *Strangers – i) other Yoruba citizens (elu), and ii) non-Yoruba people (Kogbede) e.g. Hausa.*

The first three were attained mainly by ascription, but vertical mobility was possible from the lower classes (3 – 5), although quite unlikely, and the Kingly stratum, was almost always accessed by birth[36]. This class structure was generally reflected in the town plan in traditional Ile-Ife with the areas immediately close to the palace settled by high ranking chiefs, followed by the palace courtiers, and beyond were the homes of the rest of Ile-Ife citizenry.

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[35] These were often developed through conquest of one ethnic group by another thereby gaining supremacy and also on the basis of economic means, which in traditional society related to ownership of land, farming or trading successes.

[36] The exception is when military adventurers occasionally succeeded in establishing new dynasties.

3.2.1 Traditional domestic space organisation and space use

Gugler and Flanagan (1978) identified that the compounds, and not the roads were the most important elements in the traditional Yoruba town. The traditional domestic buildings in Yoruba land and in Ile-Ife, have thick mud walls (between 6-12 inches), and bamboo rafters with thatched roof construction. There have been some modifications to most of the traditional houses sampled; mainly in the form of corrugated roofing sheets instead of thatch, and occasionally, cement: sand plaster to mud walls. As mentioned previously, the traditional multi-generational family compound (*agbo'le*), comprising of a group of *courtyard-type* or *orowa-type* houses or both. The courtyard house with its inward focus of small rooms around a large courtyard/impluvium or a series of interconnected small courtyards/impluvia was more common among the chiefly ranks and often developed in an agglomerative way (see Figure 3-5, p77). The orowa house on the other hand is more common in the area, consisting of small (bed)rooms usually with one small window or none, aranged round the orowa. These are type I housing based on Rapoport and Hardies's (1991) classification system.

Ile-Ife is in the forest region, between longitude 4.6 E and latitude 7.5 N[32], with an annual temparature range of between 25-30° C, and in a very humid region (relative humidity 69-80%). The effect of the weather is that open shaded spaces are more comfortable, particularly in the daytime. As such, the use of thick adobe walls, coupled with small windows, the sloping roofs with eaves overhangs, is a valid response to the hot humid weather. This is not to say that the architectural form of small rooms around a communal space is the only architectural response in the region, but it is a common form in the west African region, as is seen in Bini architecture (SW Nigeria) and further afield in the Ashante architecture (Ghana).

[32] Source of information: www.ifetourism.com/history.html (This value varies slightly according to different sources).

In both the courtyard and orowa houses, the house is not usually orientated in any particular fashion on the collectively owned land. The key distinguishing feature of the orowa house is that spaces are linked to each other through other spaces or through the orowa. The main entrance into the house is usually directly into the orowa or into a small lobby connected to the orowa or through a covered front veranda, which then leads into the orowa. The space around the courtyard was a major activitiy space- for cooking, laundry, food preparation, eating, livestock rearing, storage of raw food, domestic furniture, farm produce and implements for all members of the extended family. Water was often collected in large mud vats (*amu*) and containers, and stored permanently in the impluvium; aided by the saddle-back roof construction. Also, bamboo baskets, calabashes/gourds containing food items, clothing, low stools for sitting (apoti), firewood, pots and pans for cooking, were usually in the courtyard. The courtyard itself was also occasionally designated for the worship of traditional/ancestral deities with items of worship kept there or in a separate room, and surrounding porches or the front veranda may contain graves of ancestors. The majority of the activities and objects found in the courtyard, are transposed into the orowa, with storage for domestic objects and cooking being a prominent feature of the orowa.

figure 3-4: Eating area, food cupboard, and laundry activities in the orowa

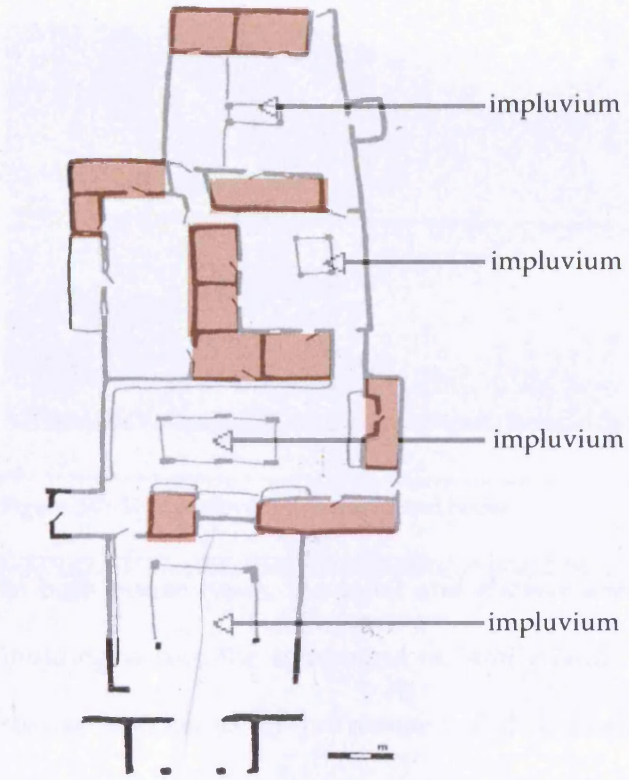


Figure 3-5: Family compound house with several impluvia

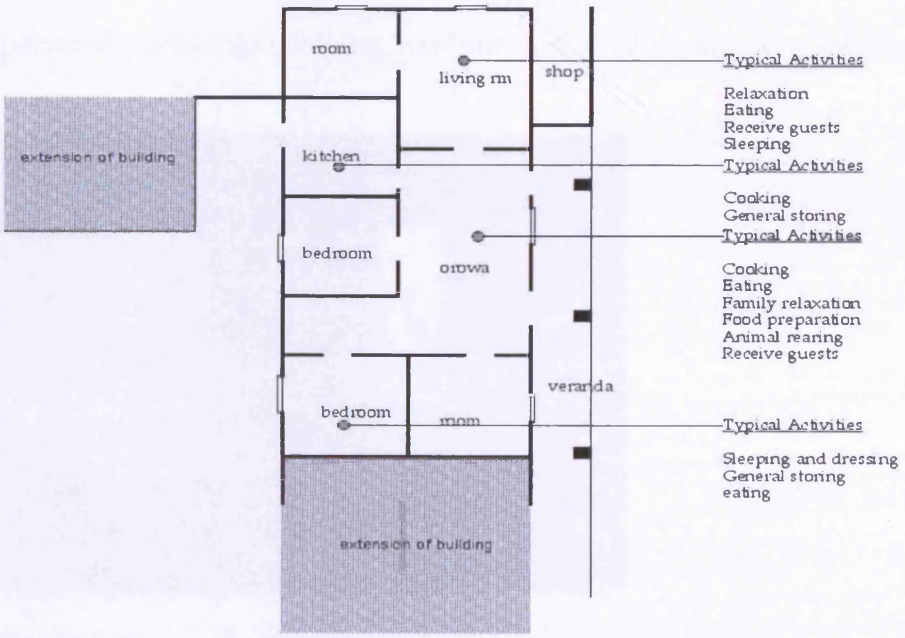


Figure 3-6: Example of orowa house

Figure 3-7: Typical elevation of traditional house

In both house types, the toilet and shower areas are always separate from the main building within the compound or family land. Each bedroom, or suite of two/three rooms, belongs to an individual and their nuclear family, but this was different in a polygamous set-up, whereby each wife and her offspring had a room or suite of rooms, while the husband had a separate bedroom. The bedroom, is the only real 'personal' space available to the nuclear family, or to each wife and her offspring, and contained personal belongings (clothing, food surplus, religious amulets, jewellery, valuables).

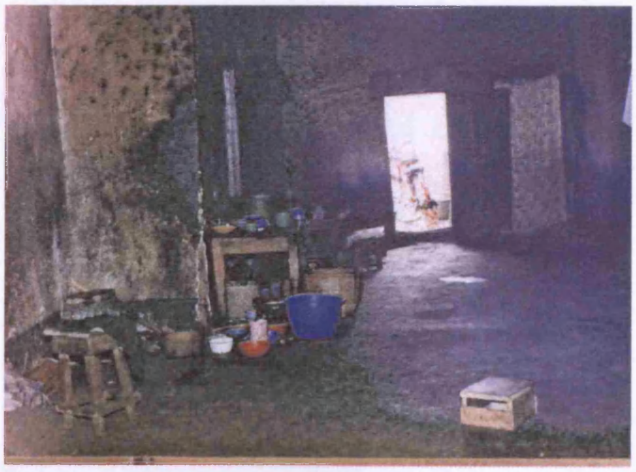


Figure 3-8: Picture of food preparation in the orowa/courtyard

Bedrooms tend to be small (about 2.8m x 3m), and are frequently without windows (or just one small window) and until recently without door locks. As such, they are not very appropriate for most domestic activities apart from sleeping and for storage. The combination of small cell-like spaces/rooms around a large communal space, has the effect of drawing members of the extended family into prolonged daily contact in the courtyard or veranda where the bulk of family life and performance of tasks take place. The consequence of the dark habitable rooms, is that many of the domestic activities which are communal in nature are 'pushed' into the central/outdoor spaces, although this is compatible with the communal nature of shared life in a multi-family residence, where most of the families are related as is the case here. Items of value such as food supplies, required for regular or everyday use are often stored in the communal orowa, or a walled-in yard, which is relatively secure, because it is shared with family members, though less secure than the bedrooms. The orowa and the courtyard were very important for storage because designated storerooms and built-in storage (e.g. wardrobes and cabinets) were uncommon features. Incidental spaces such as the loft (*aja*), roof joists, over the cooking hearth, and hooks on walls were usually used for storing or hanging things.

Figure 3-9: Use of incidental spaces for storage

3.2.2 Summary of traditional domestic spatial and space use characteristics

A) There was very little spatial distinction between personal, sacred, and communal 'zones', in the domestic space and similarly, there was less emphasis on the separation of inhabitant- visitor circulation: - the bedrooms are generally accessible to close friends, but since most of the rooms are quite small, most of the socialising with non-inhabitants takes place in the orowa, front porch or larger courtyards. Access for non-residents, was mediated not by spatial zoning, but by a combination of individual and cultural regulations that are usually known to the household and to the community. Most spaces are accessible to both genders except in a few cases where some religious shrines are barred from female access, but correspondingly, a few activities do show gender bias in which one gender is over-represented e.g. cooking and food processing.

B) The orowa/courtyard is a very important location of the majority of domestic activities and objects. While personal objects and valuables like are mostly kept in the bedroom, this does not necessarily translate into a public/private distinction, as the bedroom is often accessible to close friends. The concept of public/private zoning seems different from that indicated in many western cultures, and is further explored in this study.

C) The backyards, front porches and outdoor spaces were an important aspect of traditional Yoruba domestic life, dictated in part by climactic conditions, and the lack of indoor plumbing (water was either from a well, stream, or rainwater). The yard/outdoor space was used heavily for food preparation and processing, doing and hanging laundry, small-scale planting, animal husbandry and occasionally for religious activities (e.g. pouring of libations to the ancestors and festivals). Ceremonial cooking (and sometimes regular household cooking) small retail endeavours, and parties almost always took place outside, enabling interaction with other families and passers-by.

Figure 3-10: Use of outdoor spaces for pig & goat rearing, drying laundry, and storage

3.2.3 The link between the dwelling and civic life

The main link between the domestic realm of cooking, washing, eating, sleeping, etc, and urban civic life in traditional Yoruba Land, is via the use of the domestic space for full time occupations. Johnson (1921), Bascom and Herskovits (1959), (Ojo, 1966, 1967), Smith (1969); Falola and Adebayo (2000), amongst others, have identified farming, commerce, and craft specialisation as the three essential components of Yoruba economy, that are usually evident within the traditional dwelling. A) Key **farming** implements- cutlasses, hoes and knives, are usually kept in the orowa, or courtyard. Traditionally, men did almost all cultivation and harvesting of crops like palm oil, other food crops (yams, plantain,) and hunting of game, whilst women planted vegetables near the dwelling, and also kept livestock (chicken, goats and pigs). Nevertheless, the labour of women and older children for tending, for everyday maintenance of farms (including bush farms), head portage of harvests, and raw food processing was invaluable. As such, there was a cultural emphasis on having a large family partly to have a sizeable 'workforce' as well as being part of the family's source of prestige.

This translated into a generic spatial 'zoning' with women involved intensively with activities (e.g. sweeping, laundry, cooking etc) inside the dwellings and its immediate environs, whilst men organised activities that were further away from the home (in the outskirts, farms). Whilst farming is no longer the main occupation of most people, just over one fifth of women and one third of men in the country are still involved in agriculture according to the 1999 Nigeria demographic and health survey by National Population Commission (2000), and 25% of the households surveyed in this thesis had farm tools in their dwellings.

B) Commerce was another important part of traditional urban and domestic life for both men and women in Ile-Ife and amongst the Yoruba, and remains so, with over a quarter of households surveyed engaged in small-scale retail activities operating from stalls/shops attached to their dwellings. Commerce was either local; related to crafts, or focussed on trade with other Yoruba cites and non-Yoruba peoples such as the Nupe and the Bini, involving the use of barter goods as well as use of money (cowries), particularly for trade with other peoples, which predated European contact and trade. Although pure conjecture, the likely focus of external trade would have included crops such as kola nut, cloth, some ivory, coastal salt, copper and tin, culinary salt, leather goods, some livestock, small quantities of cowries and possibly beads (Johnson, 1921). These goods were stored within the domestic compound, since the majority of the markets were periodic with no fixed lockable stalls.

There was some degree of gender differentiation in the structure of commercial activity. Local food crops trade was mainly a female domain, whilst long distance trade and external trade (for cash crops and later for slaves) were understandably, male dominated although a few women participated in it. Nonetheless, most women at some point

were involved in trading farm produce, or in the distributive network for the sale of manufactured goods, which were useful independent income that enabled some to become quite wealthy. This helped many women to fulfil financial obligations to their natal family to which each individual continues to maintain lineage ties, financial obligation, and some inheritance rights even after marriage in Yoruba culture, and these responsibilities are important even in present day Nigeria [Oyewumi, (2005)].

C) The existence of internal and external trades coupled with relative stability before the 18th century, enabled **specialisation of the crafts** (weaving, goldsmithing, and sculpturing of artwork, and clay domestic utensils), and **manufacturing** (blacksmithing of iron domestic and farming implements) to develop in Ile-Ife. The patterns of specialisation, particularly in the crafts were often along lineage lines ensuring interdependence, and high skills attained influenced the development of external commerce with other kingdoms beyond the region. Most of the 'workshops' were integrated with the domestic complex; intermingling side-by-side with domestic life and often, labour supply for both were inseparable.

Although both men and women were involved in the craft industry and benefited financially from it, some gender distinctions also existed. The production of 'prestigious' crafts (e.g. iron-working, smithing of copper and brass for statues and vessels of prestige) was more male dominated, whilst crafts for everyday domestic use and for sale such as dyeing of fabrics and pottery of large pots, cooking utensils, water pots, and dishes were mostly carried out by women. The only exceptions to involvement in production were the older male and female folks who were exempt from most manual work. Although certain aspects of domestic household work were generally gender based, this was not a dogmatic demarcation. For example, while cooking and food preparation involved

mostly females, males would be expected to assist in physically demanding tasks e.g. fetching water from wells/streams. In some instances, age seniority could supersede gender in the assignment of tasks. If there were only male children in the household, or they were the youngest, they were more likely to be given basic manual tasks like dish washing, and perhaps assist in aspects of food preparation, while older (and possibly female) children played more supervisory roles, and carried out tasks considered to be more complex/dangerous. As a result of both men and women's involvement in the three main traditional modes of economic production, many women were often wealthier than their men-folk in clothes, ornaments, and jewellery, and had full control over their independent income (and property).

3.2.3.1 Inheritance Patterns amongst the Yoruba

Inheritance patterns also played a role in the acquisition of domestic objects and capital, for both genders. An individual could inherit from paternal and maternal sides, though traditionally a male's share would be bigger, and siblings also can inherit from each other. Property that can be bequeathed includes houses and their contents, slaves and even wives, while titles and office are usually not bequeathable. Wealth was considered not only in terms of farming success, but also in the size of the family, numbers of servants and slaves owned by the household head and these in turn, provided the manpower to work and generate more wealth. Wealth was important as it was manifested in the social expenditure of maintaining many wives, children, followers, clothing, titles, as well as spending on funeral rites and celebrations and its value was mainly as expressed in this sense and to some extent, in property. Consequently, few physical domestic objects, served as 'status' symbols within the culture.

3.2.4 Summary of key social characteristics in traditional Yoruba life

A) The lack of a distinction between domestic household life and income generating activities, coupled with the lack of differentiation between personal, and communal zones suggest an absence of any straightforward binary 'oppositions' in the Yoruba domestic setting.

B) There was no rigid spatial distinction of the home on a gender basis though most domestic activities were done by women and children. Quite a few women crossed the divide into male dominated occupations, as female labour was indispensable for many male endeavour$ such as farming. Whilst moslty men were involved in manufacturing, they mainly operated from within the dwelling, which was the focus of many female oriented activities.

C) The fact that many women had independent means of income via trade and inheritance meant that both men and women could accumulate property. Although crafts and light manufacturing have waned drastically, farming and small-scale commerce remain important secondary interests for many households and have a visible presence in the dwellings.

Subsequent contacts with European cultures, the Trans-Saharan trade, and the transatlantic slave trade with which the Yoruba were involved, led to an influx of new crops and resulted in changes in economic and social relations due to a bigger source of wealth, and the emergence of a waged workforce from the expansion of non-farming occupations. This fuelled the commodification of land and the demand for nuclear family oriented dwellings, but the traditional agbo'le continued to survive, although its relevance was gradually eroded with the emergence of new dwelling types.

3.3 Spatial and Social Organisation in contemporary Yoruba life

The expansion of the monetary economy in the colonial period, from around 1861 onwards, was mainly beneficial to the upper classes, though some lower class men and women also achieved upward mobility. A *nouveaux riche* group emerged via earnings from new crops (cocoa and rubber) farming, mining and metallurgical industries, achieving officer ranks in the British-inurgurated army, and from international trade.

Gradually many of this new class invested in the newly introduced formal education for some of their children and with time, there was decreasing emphasis on ascription, and an increased emphasis on achievement as a means of upward mobility but, the side effect of more children receiving an education was a decrease in free labour on farms. Transformations also took place in land tenure because the need for huge tracts of land for cocoa led to increasing commercialisation of land and inevitable conflicts as land interests became the focus of nuclear families, instead of the extended family [Bascom, 1951, 1962].

The expansion of non-farming work, and the colonial civil services, led to the creation of a huge waged workforce. The by-product of these, was an increasing availability and acquisition of imported goods, the introduction of modern banking systems in place of the traditional esusu (thrift and credit associations), and migration to cities (Oyewumi, 2005) to take up manual and junior clerical jobs. While the lineage remained important, the gradual detachment of individuals from kin connections, (though incomplete in Ile-Ife) according to Hodgkin, (1960), and Falola and Adebayo, (2000) was accelerated by new occupations principally accessed through tertiary education. Wage earners and the new 'elites' became more individualistic, and built/rented self-contained dwellings for their nuclear families; a process also enhanced by land commercialisation.

Imoagene (1992), and Falola and Adebayo (2000) contend that the new entrepreneurs and professionals was not a bona-fide 'middle class' in the Weberian sense, because they lacked full independence, and assert that an autonomous middle class, only fully emerged in post-colonial era (after 1960). The middle class expanded with Nigeria's incorporation into the world system of production, but in the colonial era, integration was mainly via business, educational institutions, and religious missions. These, coupled with the colonial rule usurped a lot of the powers of the traditional kings and chiefs.

The major classes were fully emergent by the middle 20th century: - a) the indigenous farming population, b) the administrative power and c) the waged working class; a class that employed many indigenous political elite fortunate to have western education.

The run-up to independence saw the replacement of expatriate administrators with indigenous staff, thereby consolidating the new middle classes, for whom a university education guaranteed entry into the public service or the professional private sector as a nearly ascriptive right [Beckett and O'Connell (1977)]. The burgeoning working and middle class powered the commercial market for single household dwellings.

3.3.1 Colonial Ile-Ife domestic space organisation

Initially, the main influences for the new domestic plans, were the *'Brazilian'* house introduced by ex-slaves from Brazil back in the mid 19th century, and to a lesser extent, the 'Colonial' houses and the estate model of the Government Reservation Areas (GRAs) developed by the British in most of their seats of local government including Ile-Ife. The town expanded with other Yoruba and non-Yoruba groups, when the university was sited there and the residential sector had to respond with new housing units and forms.

Quite significantly, many of the Afro-Brazilians returned with skills in the building trade and most settled in Lagos, and by the late 1880s' constituted about 9% of its population. The 'Brazilian' house was typified by ornamentation and classical style relief to doorways and windows, with features such as columns, balconies, verandas, and bright colours, but its clearest influence was the two-storey house referred to as *Ile-petesi* or *'upstair house'*. Many suggest that only the facades of these buildings were Brazilian in origin, but Vlach, (1984) argued that the plans were also Brazilian, stating that structures more than one room deep or two storeys tall was a departure from traditional Yoruba plans.

The Brazilian house plans typically featured a central hallway flanked by rooms on both sides. Usually rooms on one side of the hall were wider than the other side, or alternatively, one of the front rooms was replaced with a veranda or incorporated into the hallway as a receiving lobby (Figure 3-12, p89). This was similar to urban houses built by Afro-Brazilian slaves in Brazil in early 19th century that was either two-storey (sobrado) (two rooms wide and three rooms deep) or one-storey only (terreo). The single storey layout became popular throughout Yoruba land including Ile-Ife, and had become established throughout southern Nigeria for almost a century by the 1930s and 40s.

Figure 3-11: Plan of a 19th century Sobrado from Brazil

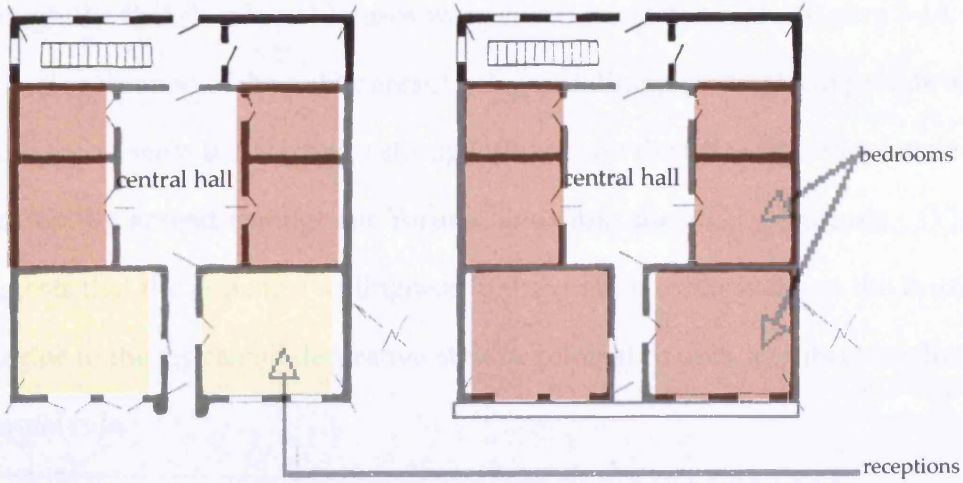


Figure 3-12: Plan of a two-storey 'Brazilian' house built in Ife (1929)

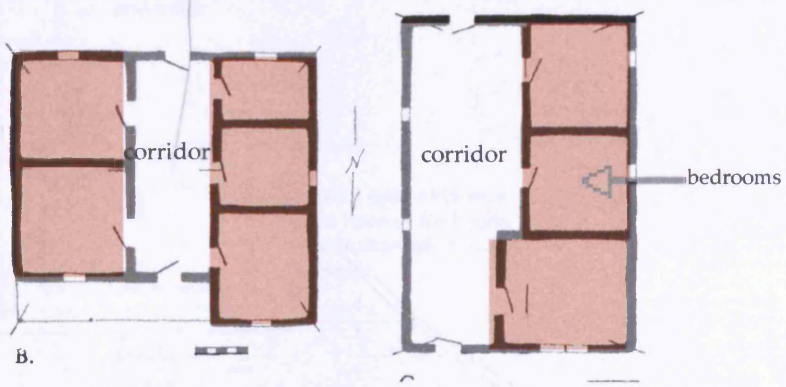


Figure 3-13: Contemporary bungalows in Ile-Ife (built in 1944 and 1973 respectively)

A number of changes in the family structure (partly a result of the spread of Christianity and its emphasis on monogamy), the emergence of the merchant class (and the need to show off new wealth and prestige), and the erosion of the powers of traditional rulers, provided incentives for the adaptation of the Brazilian house to satisfy new ways of living namely increased privacy and individuality. Its popularity was not restricted to wealthier patrons as even the dwellings for poorer people borrowed aspects of the Brazilian house in form of the adoption of the central hallway, lobbies and very modest use of ornamentation. [Vlach,(1984) p18)].

Though the British colonial houses were also two-storeys high, (Figure 3-14, p90) with vertical separation of the public areas (living and dining rooms) from private areas, these plans do not seem to have had a strong influence on the first-stage adaptation dwellings that rapidly spread throughout Yoruba land from the 1940's onwards. (Vlach, 1984) suggests that the apparent willingness to draw more extensively on the Brazilian type, was due to the restrained decorative style of colonial houses, and its more direct links to colonial rule.

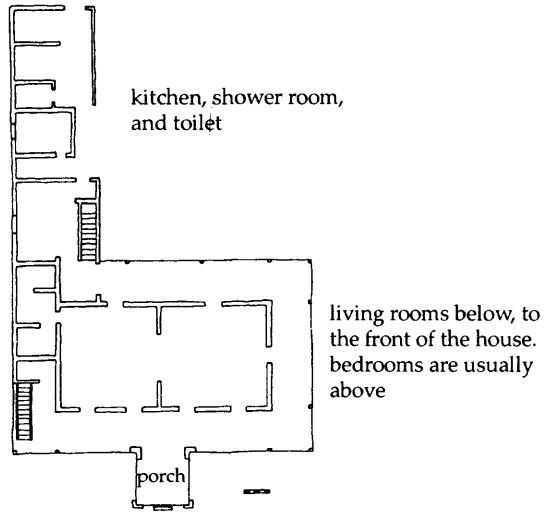


Figure 3-14: Plan of British colonial house

It is also suggested by this researcher, that the Brazilian house was attractive because its arrangement of similar sized rooms around a central space was not dissimilar to a simple orowa house plan (see Figure 3-6, p77), could accommodate many of the functions of the orowa for extended family use, but can be used by a nuclear family. The Brazilian houses were often situated in traditional neighbourhoods, and were easily identifiable, while the colonial style with its support system of stewards and security guards, housed in the 'boys' quarters, was segregated in government reservation areas. The 'upstair' house became popular with the new breed of property developers for accommodating working families in the urban areas, for multi-family use, albeit unrelated, as a tenement.

3.3.1.1 The Tenement House- spatial characteristics

The multiple household tenement house was in essence an 'upstair' house, developed from the 1940's onwards. It differed distinctly from the traditional family house in tenure and plan in the sense that it is rented as opposed to owner-occupied. The tenement house (see Figure 3-15, p91 and Figure 3-16, p92) is almost always a detached house on one or two floors, on plots of about 15/18m x 30/36m with side boundary walls but usually no front boundary wall, and oriented towards the road. The layout is a double loaded central corridor/hallway (about 1.6 – 2.0m width) with a front and back door at opposite ends and with six to ten rooms per floor of about 10-12 m^2. The upper floor is almost identical to the ground floor, and usually has an internal staircase in the main corridor. Some also incorporate a veranda with front pillars at the front of the house.

Many households rent one or two rooms for use as a living room and bedroom and in many plans a set of two rooms will have a connecting door enabling its use as a suite. The toilet, shower, kitchen are shared with other households and may be in a separate service block to the rear of the plot or attached to the building by a secondary corridor. These types were mainly found just beyond the old town centre, in the areas where 'new' modern planning interventions began to affect the layout of Ile-Ife.

Figure 3-15: Typical elevation of multiple household tenement house

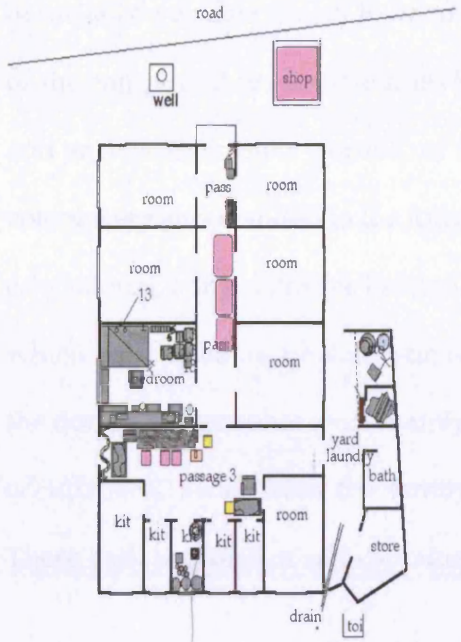


Figure 3-16: Example of multiple-household tenement dwelling

Both Brazilian and tenement types were mostly built of mud bricks and cement plastered walls and often painted, in contrast to traditional adobe construction but ornamentation was very limited in tenement houses. Whilst the tenement caters for working people who cannot afford self-contained units, multi-family occupancies sometimes occur in Brazilian-style dwellings, whereby owner-families rent out rooms in their dwellings.

3.3.2 Post Colonial Ile-Ife domestic space organisation

Over the last 30 years, cement blocks with plaster and paint finish became more widespread, for most rental and owner-occupied buildings. Roofing materials also changed from thatch to corrugated iron sheets and latterly to corrugated asbestos cement sheets (or clay tiles for those who could afford it), which eliminated the loft space. The expansion of the economy provided the cash to finance these changes, but

because of variable access to wealth within an extended family, prosperous members of the compound were sometimes keen to break up the compound/house to 'improve' and enclose their own 'portion' of it. The economic expansion during and beyond the colonial era also resulted in the introduction of new building types for religious, judicial, educational, administrative headquarters, health, and manufacturing functions, some of which used to be in the domestic residence. Single household dwellings appeared on the domestic scene that were mainly rented by those in the new clerical and professional occupations, away from the family home and invariably away from the hometown. These took the form of self-contained flats, semi-detached houses and detached houses.

3.3.2.1 The self-contained flat

Self-contained flats are typically in a detached building on one level, or on two floors with 2 flats per floor on a plot of about 16m x 32m (512m^2), a boundary fence and gated entrances, a front setback from the edge of the road of at least 6m, side setbacks and a setback at the back of the property from the boundary fence. There is usually a single access staircase at the front or side of each flat to an upper floor balcony that usually runs along the full length of the front facade of upper level flats that may be exposed, enclosed or simply protected by a roof overhang. The internal layouts are very similar –the flat's front door is off the front balcony/veranda, and usually opens into the main reception space called a 'sitting' room. A central corridor typically runs off the living room to the rear of the flat with a single loading of two or three bedrooms (see Figure 3-17, p94). The kitchen, toilet and bathrooms/showers are to the rear and may open onto the principal corridor or have a secondary corridor or lobby.

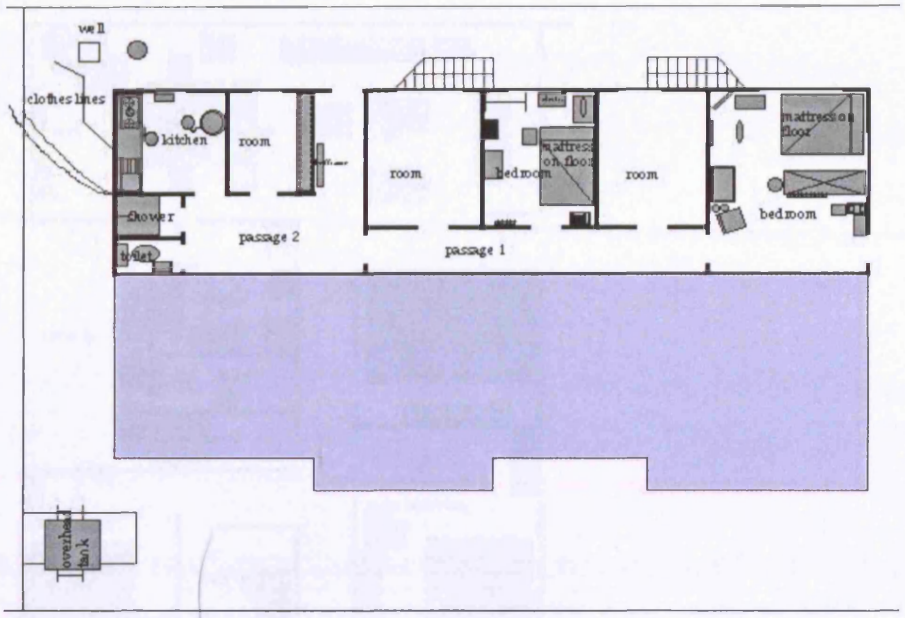


Figure 3-17: Example 1 of linear layout self-contained flat.

This is quite a departure from the 'upstair' and tenement houses, although retaining the idea of a central hallway there is a degree of separation between the reception room, the bedrooms and the service rooms, usually with doors dividing the corridor allowing each 'zone' to be demarcated.

3.3.2.2 *The Semi-detached house*

Semi-detached houses are on two floors, on plots of 400-550m^2 with boundary walls or hedges with shared or separate drive-ins. Some units particularly those built soon after independence, have accommodation in a separate building to the rear of the plot for live-in help in a similar manner to the colonial house (boys quarters) that in many cases was used for storage, live-in help or by relatives. The plans are quite compact: – the ground floor usually has a veranda, living room, kitchen, a guest toilet, and storeroom,

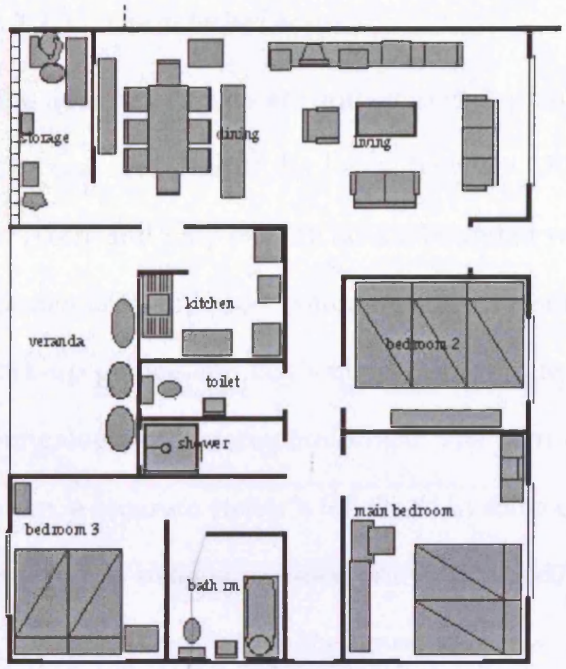


Figure 3-18: Semi-detached house

or occasionally, a study room, while the bedrooms and bathroom and sometimes a balcony are on the upper floor. The front door either opens directly into the living room or may lead into an entrance lobby. The kitchen, shower and toilet as in the case of the flats, tend to be on a secondary corridor where the accommodation is on a single floor or separated vertically. The narrow corridor that is prevalent in this type is unsuited for use as a major activity space unlike the hallway in the tenement and 'upstair' house .

Figure 3-19: Typical elevation of semi-detached house

3.3.2.3 *The detached house*

The detached houses are quite varied in plan, and bigger than the other two types with a typical footprint of the house between 170m^2 to 250m^2. They are on plots of 500m^2 to 700m^2 and may or may not be bounded with a boundary fence or hedge with some garden area and most common in the newer parts of Ile-Ife. In most cases, there is a lock-up garage and boy's quarters, separate from the main dwelling. They are either bungalows or 2 storey buildings. The plan usually has three/four bedrooms, a study room, a separate visitor's toilet and in some cases, a separate guest bedroom. The main entrance is usually recessed with a covered/open front terrace or porch, which opens into the hall and where the house is on two floors, the main staircase is accessed from this hall. A secondary exit is usually provided from the kitchen area and a second escape staircase from the upper floors off a balcony or veranda to the rear of the property.

Figure 3-20: Elevation of detached house

Detached houses almost all have designated storeroom(s), built-in cupboards and cabinets for storage in the kitchens, and bedrooms. The provision of built-in cabinets, wardrobes, shelves, cupboards, was unique to the detached houses of the post-colonial era.

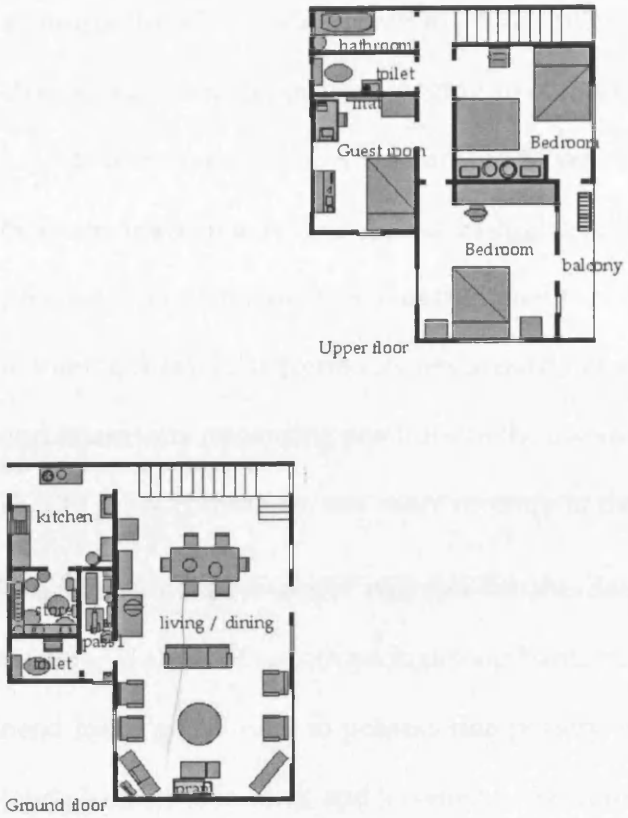


Figure 3-21: Example of detached 2-storey house plan.

3.4 Summary; from the traditional to contemporary society

The separation of many civic functions from the domestic space, expansion of the waged economy, a more nuclear-family focus, and emergence of a middle class, combined with improvements in building services, had the following impact: - a) the popularity of single household dwellings, b) creation of a massive rental sector, c) elimination of traditional spaces like the orowa in newer dwellings, and d) emergence of new status objects.

Although the expansion of the self-contained housing market was propelled by the emergence of the middle class, this was more accessible to men than women. Education was the main route into this group and initially, greater emphasis was placed on males

attaining high levels of education. Still, many women gained access into the middle classes via marriage, or by engaging in commercial activities, enabling them to afford aspects of a middle class life: - cars, and even self-financed higher education. The gap between male and female access to higher education has narrowed in recent years, because of a greater awareness of the benefits of two strong incomes in a household. But it is noted that whilst Yoruba society is patriarchal, many women were in highly regarded and financially rewarding positions in the traditional and contemporary society; in some cheifly roles, commerce, and more recently in the professions and in government.

The effects of these social changes on the domestic world were visible. Alongside traditional signs of wealth such as food barns, farms, and having a large family, was the need for a 'good' wife to possess fine pottery, cooking pots/cauldrons, the traditional fabric/outfits (aso-oke), and jewellery. With the expanding economy and aspirations, new objects such as chinaware and modern labour saving gadgets, radios, televisions, furniture suites, and cars, began to compete with the traditional status focus.

Strategies that individuals/families have employed to maximise their position in the class structure of post-independence Nigeria has been primarily through tertiary education, and also by commercial retail activity. Ironically, due to their political influence, wealth, and control of family land in traditional societies, the chiefly stratum were best placed to access the newer commercial trades in cash crops. The wealth from cash crops helped the chiefs to acquire more educational capital for their children (mostly male but increasingly also female), who then had access to skilled professions, and the middle classes. These are quite standard re-conversion strategies according Bourdieu (1984), and were the norm until the introduction of free education in southwest Nigeria, which helped to equalise opportunities to a significant extent.

The town itself has expanded beyond the city walls, boosted by the advent of the university in 1967, covering about 59 square kilometres. Ile-Ife's stable pace of urban growth has been plagued with civil unrests with the neighbouring town of Modakeke in the last 7-10 years. Many domestic and commercial properties in both towns were destroyed, but Ile-Ife's population has remained relatively stable at about 326,000 and remains the headquarters of Oranmiyan local government, an area of approximately 1900 square kilometres and a total population of about 770,000.

Traditional buildings have fallen in popularity partly due to the aspiration for modern types often with little concern for the appropriateness of such, and as such a large number of these dwellings have been destroyed to make way for modern types. Nonetheless, Ife's domestic sector continues to require a similar range of domestic dwellings and the sample survey described in the next chapter includes all the main types: - shared accommodations (traditional orowa houses, and tenement houses), and the self-contained units (flats, semi-detached houses and detached houses).

Chapter 4: Research Methodology

The chapter deals with general sociological principles guiding the investigation and a discussion of procedures adopted in the empirical study in relation to the key concepts investigated. Descriptions of specific techniques and methods used are set out with the advantages of each technique identified. The chapter also includes a description of constraints and limitations encountered at the information-gathering and data entry stages.

4.1 Research Strategy

The questions outlined in the introduction require information about the following: -

- The spatial organisation of the internal spaces,
- The location of physical objects and activities within and around the domestic space,
- Perceptions and attitudes about space use, and variations in attitudes that may exist.

As all methods have their weaknesses, many social researchers such as Bulmer (1984), recommend a combination of strategies/techniques to maximise accuracy and depth in the results, consequently, this study utilised a combination of methods. The main challenge faced was the measurement of variables like the widely studied socio-economic status (SES) that are quite complex to measure [Judd et. al. (1991) and Bernard (2002)], but for which income and level of education are often used as the key indicators. Although these indicators are not exhaustive (other indicators include occupation, number of generations in close community etc.), it is not impossible to achieve appropriate measures of this concept, using both indicators, and these were utilised in the study.

In order to obtain the required information about the household, domestic activities and objects, the decision was taken to combine the use of structured interviews via an administered questionnaire, with floor plans and object location maps of the households

surveyed. Two main techniques were utilised in analysing the floor plans. These are 1) *Space Syntax methods* developed by Hillier and Hanson (1984) and 2) a process of *geometric typing* using criteria based on definitions by Sorensen (1991), Bulmer (1992) and Van Leusen (1996). Floor plans were prepared first hand on site, and measurements of the spaces was based on the ceiling boards of known dimensions for approximate sizing of the spaces. This level of accuracy was considered to be sufficient, as the spatial analysis techniques used are independent of metric size. The location of the objects in each space was based on the ceiling grid module, as well as known standard sizes of the objects. All the techniques adopted are described in below.

4.2 Survey Design

The thesis developed from an unpublished MSc research report by this researcher at Obafemi Awolowo University, Ile-Ife, Nigeria (in 1988), that compared user's assessment of storage needs in the domestic space with architect's understanding about storage needs. It involved the use of structured interviews based on a questionnaire administered to households in Ile-Ife and to architects (in Ile-Ife and Ibadan). One of the results of the study- that storage patterns were distinctive enough to map changes in some cultural ideas about space use- suggested that there was scope for further research, and also highlighted the need to broaden the study to include other aspects of space use.

The fact that the bulk of housing stock in the region is in the hands of private landlords, and attempts at providing public housing have been largely unsuccessful, also highlighted the need to seek to contribute to a growing body of knowledge available about housing morphology, sociological needs and conditions in SW Nigeria.

A single town was sampled for practical reasons, but the areas and dwellings chosen include traditional Yoruba dwellings dating back to the turn of 19th century and contemporary accommodation, some built as recently as the early 1990's. Ile-Ife was stratified on the basis of socio-economic characteristics and period of construction into 3 zones. One area each from two of the socio-economic strata, and two areas sfrom the third stratum were chosen[55]. The primary sampling unit is the household and 40 households were sampled in each of the four areas making a total of 160. Only one member of each household was interviewed and only one household was surveyed in multiple-household dwellings to increase the variety of floor plans surveyed.

The areas sampled are: -

a) Enuwa: - which is in the oldest existing quarters in Ile-Ife next to the palace of the king (*Ooni* of Ife) and the main central market (Enuwa market) mostly occupied by extended families with many dwellings that go back to the 1890s. The housing unit predominant in the area is the *agbo'le* described earlier in chapter one[56]. Consequently, the majority of dwellings in the area are owner occupied. Many of the Enuwa dwellings belong to the families of traditional titled chiefs whose lifestyles are more focussed on traditional customs, and religion.

b) Akarabata Layout is the earliest planned housing area in Ile-Ife on what was the outskirt's of the town, and was developed between 1954-1962. The plots were allocated for private development based on what was described by the planning authority as a 'gridiron' pattern of three parallel streets. As a result of a local government stipulation that all plots must be developed within 2 years of purchase, most of the buildings were

[55] 2 areas were chosen from the high-income group to include the most recent construction and to avoid undue bias of the university staff accommodation within the strata.

[56] see fig 1-2 on p17

constructed between 1955-1962. The area has become hemmed in by more recent growth and mostly contains rented multi-household tenement dwellings with shared communal facilities and many of the inhabitants of the area are in clerical jobs, or commerce.

c) The privately developed Estates are new development areas located on the current periphery of Ile-Ife along major inter-town links and were developed between 1970's to early 1990's[57]. The area contains mainly rented self-contained single household accommodation targeted at salaried earners in the middle-income bracket employed either in the university because of its proximity, the general hospital or in local government departments. The estates that were surveyed are Ajanaku estate, Ola layout, Omole estate and parts of Sijuwade estate. Private individual developers were responsible for the estates surveyed with the exception of parts of Ola Layout that was developed by the Government Housing Corporation.

d) The university staff campus housing: - The university campus has been at its current site[58] since 1967 although the date of inception of the university is 1962, and lies on the outskirts of Ile-Ife. The campus was designed by a combination of expatriate and local architects and comprises faculty buildings, student halls of residence, staff residential area, recreational and light commercial facilities and a primary and secondary school for staff children. Most of the domestic dwellings were constructed between 1966 to early 1970's with another spate of expansion in the late 1970s to very early 1980s. The staff accommodation is divided into spatially distinct areas for academic and senior administrative staff and junior clerical and service staff. The dwellings are self-contained, rented single-family occupation, occupied for the duration of employment with the university.

[57] see fig 1-5 on p19

[58] The university was initially based in another city (Ibadan) and moved to Ile-Ife in 1967 when the king of Ife gave the university board some land for a campus on the outskirts of the town.

Samples from the campus, and the estates were chosen because they are recent contemporary housing influenced by western architecture both in layout and aesthetic intentions. Akarabata was chosen for its older multi-household housing, while Enuwa was chosen for its traditional extended-family dwellings. Differences in the areas in terms of socio-cultural development, types of accommodation, and period of construction, enabled a single-phase sampling to be deployed in a diachronic discussion.

4.2.1 Method A: - Structured Interview (Questionnaire)

The advantages of a structured interview based on a questionnaire include – a) the ability to obtain information from people who cannot fill a form because they are illiterate[59], and to explain the question if it is not fully understood, and b) the opportunity to measure and draw the floor plan at the time of the interview. The advantages outweighed the drawbacks of interviews such as the risk of influencing a respondent's answers. To overcome the limited field survey period of two months, interviewers were trained to assist with fieldwork. The interview took about 45 minutes and architecture student interviewers were chosen for their fluency in Yoruba and English, and the need for floor plans to be drawn. The interviewers worked in pairs; one conducted the interview and was instructed to adhere closely to the order of the questionnaire, whilst the other drew the floor plans[60].

4.2.1.1 Structure & Design of Questionnaire: -

A combination of open and closed-ended questions was adopted. Respondents were asked to inventory their own spaces as this yielded more detailed information and reduced the risk of researcher bias[61]. Open-ended questions were included to elicit more

[59] This was a major consideration in deciding to use structured interviews as many respondents in Enuwa and Akarabata had little or no formal education.

[60] The interviewer who prepared the plans was told to obtain permission to do this, whilst the interview was ongoing. In most cases, permission was granted or a household member accompanied the interviewer around the dwelling.

[61] Based on previous experience from the researcher's unpublished MSc research report (1988).

in-depth responses and focussed on the use of space while a few close-ended questions served to cross check information from the open-ended questions (e.g. Q28 and Q27). The questionnaire is in 4 sections (see sample in appendix A).

Section A contains questions about basic socio-economic data, the nature and condition of the physical structure, tenure, and the use of the dwelling for commercial activities. **Section B** dealt with user's satisfaction with their dwelling units and although qualitative, by asking respondents to rank their answers, an overall comparison between various aspects of their domestic life could be achieved. **Section C** includes open-ended questions on all domestic activities and objects, activities and items considered important by the respondent, and the relation between interior and exterior space use. The end of the questionnaire contained questions considered to be sensitive amongst Yoruba people. For example, Q48 asks the respondent about how much was spent on food, followed by Q49 - about expenses, rather than a direct question on income. Whilst recognising that an individual's response may not be accurate, it still served a useful purpose. The questionnaire questions and the concepts explored are below.

Table 4-1: Concepts and questionnaire design[62].

Concepts	Key Questions	Related Questions
Space Use	Q 27b, 28, 29, 34, 35	Q 14,15, 16, 17, 18, 19, 22
General Storage	Q 20(a-h), 21, 22, 27c	Q 23, 24, 25, 26, 32, 33, 36, 37, 38a, 41,42, 43
Meaning	Q30, 31	
Threshold	Q 32, 33, 34, 35, 44, 45	
Socio-economic position	Social issues- Q1, 2, 4, 9, 10, 47. Economic issues- Q 3, 11, 12, 13, 48, and 49.	
Privacy	Q 27d.	

[62] Note: - Aspiration and Convenience were addressed indirectly through Q 14-19, 24, 35, 38a & b.

4.2.2 Constraints and Limitations

Data entry: - The researcher conducted all the collation to avoid excessive variations in coding answers. Much effort was made to accommodate all categories of answers from the open-ended questions, without the process becoming too fragmented, but whilst the categories did not capture the personal significance of individual observations, it represents commonly shared descriptions. It was at the point of analysis that it was deemed appropriate to distinguish statistical significance from personal idiosyncrasy. The decision was taken to examine answers that constituted at least 5% of the responses but the idiosyncratic was sometimes as interesting as the patterns of similarities.

Some limitation was experienced with information on household population, and the lack of correlation with many of the concepts with which a link was anticipated, led to the information being treated with caution. Overall, the questionnaire was very useful.

4.2.3 Information about Physical Space

Space Syntax methodologies were adopted for analysing floor plans because they treat physical space as an entity with built-in social meaning, and the quantifiable techniques provide consistent means of comparing diverse domestic plans. A description of the methodologies adopted and their specific relevance to this study follows.

4.2.3.1 Method B - Space Syntax Methods

Space Syntax methodologies were used in analysing 160 houses in order to understand how social relations are expressed through spatial configuration. The main aspects of space and the relevant space syntax techniques that were of interest are: -

1) The topological idea of *depth* explained in the literature review, refers to the number of intervening spaces (steps) that separates a given space in the dwelling, from the outside world and relates to options of physical permeability between two given space labels, via doors or openings which can allow access and movement. The pattern of connections- accessibility between all interior spaces in any plan can be represented in the form of *justified graphs in space syntax.*

The Justified graph shows the overall isomorphic distance away from a root cell, (usually the outside world) as well as the total number of links or steps that separates each cell in the domestic plan from the outside world. Each room or space is represented with small circles, and all space labels of the same depth from the outside space are arranged on the same level in the graph. Permeable openings between space labels are indicated with connecting lines between the circles (Figure 4-1, p110). Each of the 160 plans was analysed in this manner to see how 'deep' or 'shallow' each plan is from the outside world. The main advantage of this form of representation is that the syntax of the plan becomes clearer, because the number of steps between cells, and the way the dwelling performs in terms of movement/circulation options are easy to identify. In theory, each cell has four topological possibilities identified by Hillier (1996) with regards to whether a space is terminal or on a 'ring' (that is, one can return to the original start point/space in a single sequence passing through a series of space labels). These are 1) cells with a single connection, that are terminal and are dead-end in nature (A-spaces), 2) cells with two connections that lie in a sequence that allows a linear procession through a series of cells (B-spaces), 3) cells that have two or more connections, and lie on a ring (C-spaces), and 4) cells that have more than two connections and lie on at least two rings (D-spaces). A higher proportion of ringy spaces (C and D-spaces) usually correspond to reduced

step depth, Hillier (1998), and a higher proportion of terminal (A-space) or thoroughfare spaces (B-space), to higher step depth, and the sample generally follows this pattern. A lower proportion of A and D-spaces on the other hand, is indicative of strongly categorised plans- Hanson (1998). These space-type information about potentials of occupation and movement, in addition to the depth pattern of each space/cell is evident in the justified graph.

An example of depth analysis (see Figure 4-1, p110) shows a single household three/four-bedroom detached house, with a combination of A- and B-spaces. This means that there is only one route option between any two spaces in the houses. The 'side effect' of the single sequencing of spaces is the deep 'tree-like' structure of the house from the exterior (five steps from the exterior). The bedrooms are on a separate 'branch', are of the same depth, and quite deep in comparison to the other spaces (four steps from the exterior). The branching allows for a sleeping 'zone' distinct from other parts of the domestic space.

In this way, each domestic space can be analysed in terms of types of spaces/spatial relationships that predominate, and how particular spaces have changed in average depth with the passage of time. A space label can also be compared across separate plans because of the measure of relative depth, which is the mean depth of a cell in a given plan in relation to all other spaces in the plan and from the outside world and this helps overcome stylistic or geometrical differences in the plans.

The actual depth of a space from the outside world was used in much of the analysis in this study, in comparing the location of various domestic activities, objects, and space labels in the domestic space. Many precedents for activity analyses using justified

graphs and depth can be found in Dursun and Saglamer (2003); Seo (2003); Amorim (2001); Amorim (1999); Bustard (1999); Hanson (1998); Monteiro (1997); Trigueiro (1997). Depth measures of different activities are explored in this research in a similar manner to Monteiro (1997), which are discussed in chapter 8. It has also been employed in a novel way to analyse the relative deepness/shallowness of various domestic objects and object categories.

2) The pattern of integration is the second syntactic measure of connectivity that was of interest. It assigns a numeric value for each space label based on algorithms calculating the connection of each cell in relation to all other cells in the domestic space. Integration values can be relativised in relation to the size of the complex, allowing for comparison of plans regardless of the number of cells. Integration values can be expressed as a table form, or as a *convex map* with a colour-coded range. The convex integration map of the domestic space consists of the number of distinct two-dimensional convex spaces that can be identified on plan (see Figure 4-1, p110). According to Hillier and Hanson (1984), a convex space is any cell/space label that is fully bounded by walls and encloses all the surface area that may be connected by any two points within the cell. This definition has been further expanded to include the coincidence of geometric distinction with functional differentiation. Connections between cells are shown with small boxes and integration values are shown by colour coding using an 8-interval scale.

The most integrated space(s) - usually spaces with many connections are indicated in red, and the most segregated label(s) which are usually those with single connections or with the least effective connection options in relation to the rest of the spaces are indicated in violet. In the example of figure 4-1, the corridor is the most connected space in the whole dwelling, and the bedrooms have only one connection and are quite segregated.

Different plans can be assessed by checking the rank order of the integration values of key function cells from the most segregated to the most segregated. In addition, the mean integration of all the spaces in each plan was calculated and this expresses the depth of the spaces in each plan are from one another, and this value can be compared across house plans.

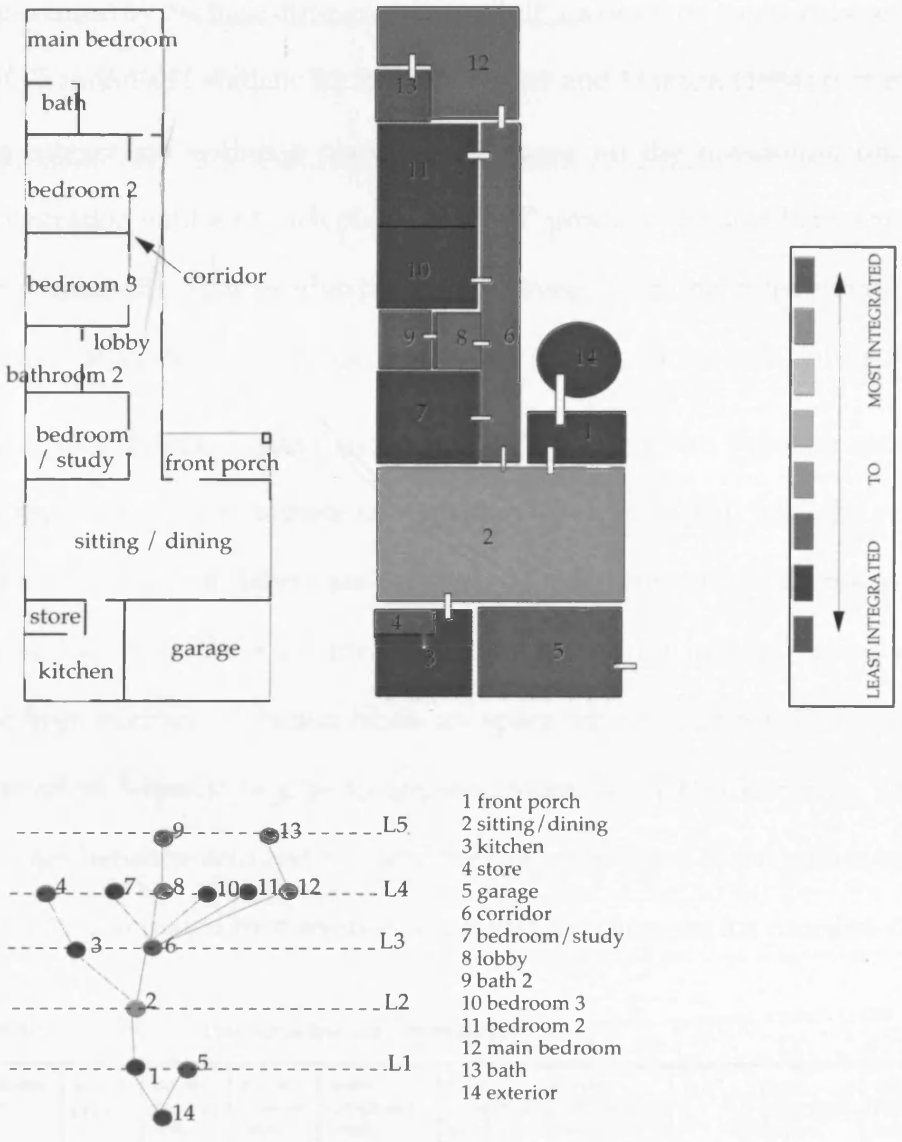


Figure 4-1: Plan, convex map and Justified graph for house no 138

Wide variation in the integration values of the spaces in a plan, suggests that its spaces are highly differentiated, which may indicate inherent differences in key domestic functions, as well as the need to reflect the differences spatially. Plans with less variation in integration values of their cells, have less differentiated spaces, and this may affect the 'match' between syntactic properties and the functional needs of activities/objects. The differentiation between the spaces in individual phenotypes is more accurately measured by the base difference factor (bdf*); a numeric measure based on a modification of Shannon's H-statistic formula by Hillier and Hanson (1984) that measures variances in integration within a plan usually based on the maximum, minimum and mean integration values of each plan. The bdf* produces a value between zero (indicative of maximum difference within the plan or strong functional differentiation) and one, which is indicative of nil difference or complete identity of the cells/labels.

3) Other Space Syntax measures: - The transition: function ratio (T: F ratio) is a comparison of the number of transition labels in a plan with the number of function labels. Transition labels are cells whose main function is access to other spaces. In syntactic terms, these are often B-spaces e.g. corridor, lobbies, veranda, entrance terraces or front porches. Function labels are space whose main role is for activities and theses are often A-spaces (e.g. bedroom, storeroom, study and kitchen). The T: F ratio value ranges between zero and one, and the closer the value of the ratio is to one, the more the plan is dominated by transition labels and the converse for function-dominated plans.

Table 4-2: Syntactic data for some survey examples

house no.	no. of cells	no. of internal cells	no. of exterior cells	most integrated (with exterior)	least integrated (with exterior)	mean integration value	bdf*	most integrated space	no. of functn cells	no. of transitn cells	T:F ratio	total depth
121	14	13	1	1.962	0.636	0.977	0.734	living rm	10	3	0.30	5
138	13	12	1	2.312	0.631	0.997	0.643	corridor	10	2	0.20	5

4.2.3.2 *Method C: - Geometric Typing*

Classification or typing is an additive process involving judgements of similarities and differences; a process described by Hodder (1987) and Bulmer (1992) as derived through theoretical development that determines the features that will be treated as similar. As such, the adequacy of identity in assigning to a class, is a direct reflection of the theoretical framework. Whilst the process of typing was seemingly in contrast with the precise measurements of space syntax, it proved useful in assessing geometric features of the plan layouts not addressed specifically in syntactic terms. The criteria on which typing of each floor plan was assessed are outlined below, and an example is included for illustration. Six topographical types were found, which exist along a continuum in terms of conformity to each criterion.

The first criterion deals with the grouping of activities into recognisable spatial *cores* of activities that are related. This is either in terms of shared object categories that are utilised in conducting the activities or activities that are performed in closely connected/ dependent sequence e.g. food preparation, cooking and eating. The cores identified are: - a) the living core (the living room, dining room or space and the kitchen), b) the sleeping core: - bedrooms (main, children, guest) and, c) the service core: - (toilets, bathroom and shower) or a variation on the service core that is based on spaces requiring plumbing – toilet, bathroom, shower and kitchen.

These cores are based on ideas about sectoring of the dwelling identified by Amorim (1999), as discussed in chapter two. Zoning is a similar concept, describing the arrangement of activities or space labels in adjacency/contiguity and separated from other groups of activities. The social sector as defined by Amorim (1999) contains spaces for the reception of people, the service sector essentially supports activities for

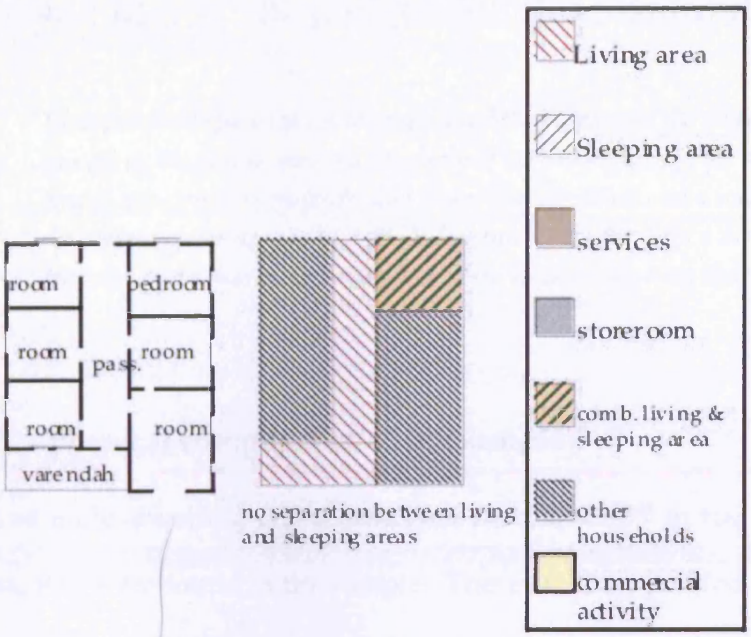
the household's daily life and the private sector is for the individual isolation of the household member. The use of sectoring in some plans, leads to the creation of an identifiable axis of separation between these activities particularly in terms of separation between the living and the sleeping core. Each plan was assessed on the basis of how developed is the bilateral axis of separation between these cores, that is, to check if all the space labels of the living sector are adjacent, and are not mixed up with space labels of the sleeping core.

Each plan was also assessed in relation to how elaborate the *threshold* between the exterior and the main interior spaces is. This relates to whether there are transition spaces like lobbies, veranda, terrace and hall between the front approach to the domestic space and the main reception space, or whether the front door opens directly into the main reception space. The relationship between indoors and outdoors for domestic activities in Yoruba culture is quite important, and it was of interest to analyse the relationship between the degree of the elaboration of the threshold, and the extent to which outdoor spaces were used for domestic activities and for storage.

The third point relates to the manner in which the *interface* with visitors is resolved. Some plans have the main visitor entrance opening directly to the main reception space (the living room in most cases), with inhabitants being able to negotiate between the different spaces of the house and the exterior, without going through the main reception space. Whether visitor movement is isolated from, or conflicts with inhabitant movement within the domestic space, constituted an essential feature by which the plans were distinguished.

The final consideration was whether the main parts (or cores) of the plan were linked by a transition space like a corridor, or by a function space (e.g. *orowa*). This assessment is linked to the space syntax measure of the T:F ratio, although the ratio is a more precise measure of the overall inclination of each plant in terms of transition or function. It was found that most of the floor plans fall clearly into either category. Plans that are more compact in terms of surface area (in m^2) tend towards minimisation of circulation/ transition spaces usually achieved by connecting spaces through function labels or by arranging rooms round a courtyard. More elongated plans where a single loaded corridor was the main means of connecting most of the space labels, tend more to be dominated by the corridor in terms of the connections of different parts of the plan.

These four aspects above relate to the geometries of the plan, and are observable by visual assessment, and although the process of assessing each plan on these criteria is not an exact science, it can be done in a consistent manner. Geometry was found to be an aspect of innovation in domestic space development, with consistent relationships with some socio-economic variables. The geometric map of the house below demonstrates the criteria quite clearly. Whilst the plan is more elongated than compact, there is incomplete separation between the two main cores (sleeping and living areas). There is little threshold elaboration, with the front door opening directly into the living room. Because of the way the cores are linked, visitor and inhabitant circulation is mixed, due to the fact that movement from the kitchen to the bedroom areas is only possible via the living room. Many plans were designed along these lines, and this pattern of development was identified as a bona-fide geometric type. (the double-loaded corridor geometric type, see Figure 4-2, p115).



4.2.4 Summary

The decision to combine research methods was a fruitful one. The questionnaire provided significant information about domestic objects, particularly those that were not on display and also served as a means of engaging with the respondents. This, combined with the floor plans made it possible to assess how attitudes, perception, socio-economic factors and aspects of lifestyle are manifested spatially, and to address the key research question about continuity and change in domestic space and space use. The availability of a measurable means of spatial analysis assisted in the comparison of apparently disparate floor plans and provided a consistent means of doing this. It was also possible to analyse the spatial information obtained from the syntactic and geometric analysis together with the more subjective social information from the questionnaire. The following chapter five provides a detailed discussion of characteristics of the sample and respondents.

Chapter 5: The sample and the respondents

To understand space use, is to understand the people and the physical space together. To this effect, the first section is a summary of the composition of the dwelling types based on tenure, construction methods, and structural condition and a socio-economic account of the sample completes the background picture. This precedes a discussion of perceptions, attitudes and behavioural preferences of the respondents from the questionnaire.

5.1.1 Physical composition of the sample

Out of eight dwelling types described in chapter 3[63] in the background to the study areas, five were found in the sample. These are the extended family orowa-type house, multi-family tenements shared by unrelated households, and self-contained flats, semidetached and detached houses, described in chapter 3. The orowa house comprises sets of rooms arranged round a central orowa space with spaces linked directly to each other or through the orowa (refer to p117 for example of orowa plan). The tenements similarly comprise habitable rooms arranged round both sides of a central corridor, with the service spaces on a secondary corridor at the back or in separate outhouses (refer to p117) for plan examples of these types). Examples of self-contained single household flats and houses were also outlined in chapter 3, often comprising reception spaces grouped together and linked to a corridor, which contains the sleeping area (see p117 for examples). Where the flat or house occurs on two floors, the reception areas and kitchen are on the ground floor whilst the sleeping area is on the first floor. For most of these flats and houses, the bathrooms are usually in the sleeping areas but a guest toilet may also be included next to the living areas.

[63] The eight dwelling types are: - extended family courtyard house, orowa house, brazilian house, british colonial house, the tenement house, flats, semi-detached house and detached house.

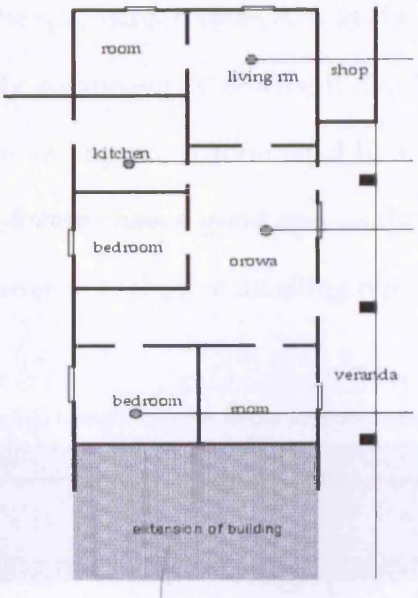


Figure 5-1: Typical plan of orowa house

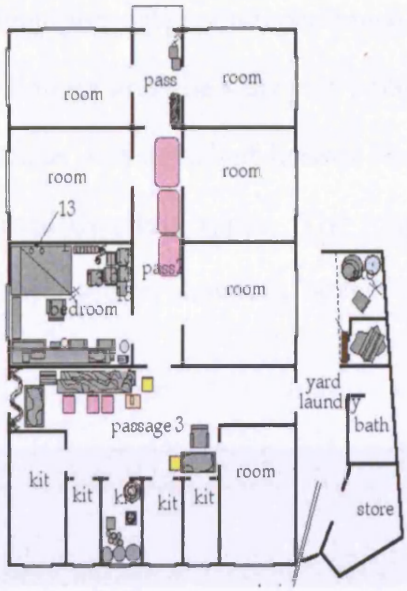


Figure 5-2: Typical plan of tenement house

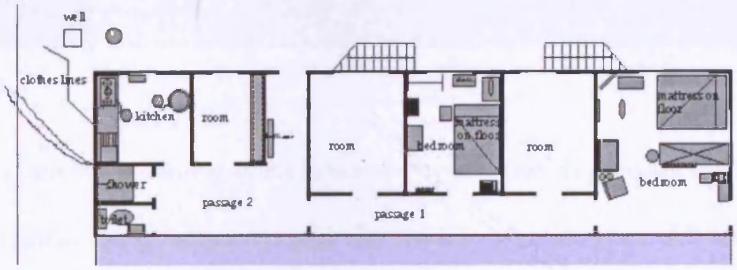


Figure 5-3: Example of self-contained flat

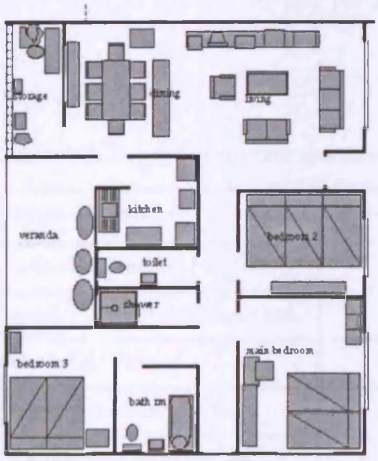


Figure 5-4: Example of semi-detached house

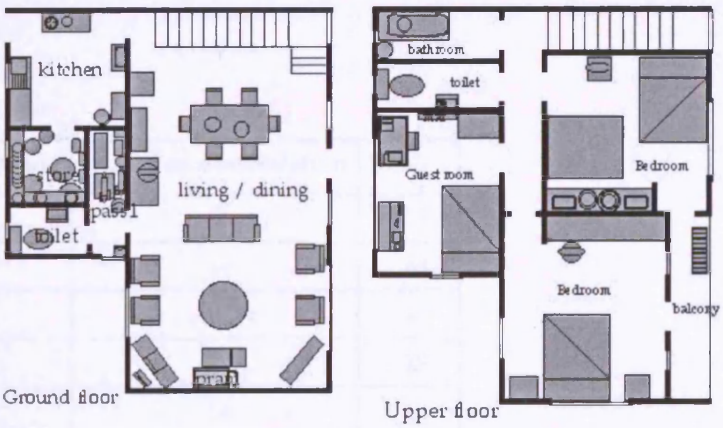


Figure 5-5: Example of detached house (on two floors)

Of the four sample areas, Akarabata, the area developed just pre-independence, is almost solely comprised of tenement dwellings, and Enuwa and the Campus whilst having more variety, were dominated by the orowa house, and detached houses respectively. The Estates had a good mix of the self-contained dwelling types. The frequency of occurrence of the five dwelling types in each sample area is shown in Table 5-1, p118).

Table 5-1: Dwelling types in the sample areas

Area	*Enuwa*	*Akarabata*	*Campus*	*Estates*	*Total*
Period	*Pre contact*	*Colonial/ & Post Colonial*	*Post colonial*	*Post transition*	
Family house	22	2	0	0	24 (15.0%)
Tenement house	6	37	0	3	46 (28.7%)
(S/C) flat	2	0	6	14	22 (13.7%)
Semi-detached duplex (S/C)	0	1	12	12	25 (15.6%)
Detached house (S/C)	9	0	22	11	42 (25.6%)

There is a strong correlation between the degree of control (whether dwelling is self-contained or shared), and the dwelling unit type. All the flats, and the semi-detached duplexes and most of the detached houses are self-contained, while all the tenements and almost all the family houses are multi-household dwellings with shared facilities.

Table 5-2: Degree of control and dwelling type

type of unit	**self-contained**	**shared accommodation**	**total**
self-contained (s/c) flat	22	0	22
multi-household tenement	1	44	45
detached house	33	9	42
semi-detached duplex	25	0	25
extended-family house	2	24	26
totals	83	77	160

All the campus units, thirty-eight of the estates and thirty-three of the Akarabata dwellings are rented, while twenty-three of the forty Enuwa dwellings are owner-occupied. While the link between forms of tenure and home maintenance is well documented- Gatzlaff et.al (1998)- the proportion of owner-occupied units (35%) in the sample gave an opportunity to assess its effects on perceptions about domestic space performance. The nature of the dwelling type and tenure pattern were found to be important boundary points in the relationship between lifestyle and space use.

Over 60% of the 160 households surveyed have been in residence for less than ten years, and the estates have the highest number of households that have lived in their dwelling for less than 10 years (80%). Akarabata and the Campus have a more stable occupancy with at least 30% of the households in each area having been in occupancy for over 10 years. Enuwa has the most stable occupancy, typically because of its high percentage of owner-occupied units. The houses sampled were in fair to good condition, with (34%) of modern (cement) construction, and 60% traditional material and construction methods, (mud), but the traditional materials are limited to Enuwa and Akarabata.

5.1.2 Socio-economic description of the respondents

Gender, education, and generation differences, were considered likely to have a direct bearing on perceptions about spatial morphology, on space use, and to aspects of meaning attributed by individual respondents to particular domestic objects and activities. Of these, educational differences marked significant boundaries in the variations in space use and dwelling types accessed by the households. This is because increased levels of education, particularly of the household heads and their spouses, usually meant

improved levels of income, and the ability to afford to live in specific dwelling types in the sample and in Nigeria generally. Ninety seven (61%) of the respondents were female and sixty three (39%) were male, and the gender proportions in each area were similar. Due to the relatively low correlation between gender and many of the dependent variables from the questionnaire, gender is used in conjunction with other independent variables, or to illustrate a point. Similarly, there was a relatively even distribution of respondents across the age groups: - 21% of the respondents were under 25years old, 28% were between 25-34 years old, a similar percentage between 35-44 years old and 20% were over 45 years old. There was little variation between the areas, except for the over 45years category.

Table 5-3: Age of respondents split by sample area

	Enuwa	Akarabata	Campus	Estate	total
Age 15-24 years old	6	9	10	9	34
Age 25-34 years old	12	12	8	13	45
Age 35-45 years old	7	12	13	14	46
Over 45 years old	15	6	8	4	33
Not known	0	1	1	0	2
total	40	40	40	40	160

Only 10% of the respondents do not have any education; mainly in Enuwa sample. About a quarter of respondents in the total sample had a university degree, 18% had a college diploma, 24% had some secondary schooling and about 12% had only primary school education. The results appear distorted compared to the 1999 Nigeria Demographic and Health Survey in the southwest zone (where Ile-Ife is), which states that about 30% have no education, and only about 10% have a college diploma/degree. Still, campus houses were included, in order to investigate the effects of tertiary education on perceptions.

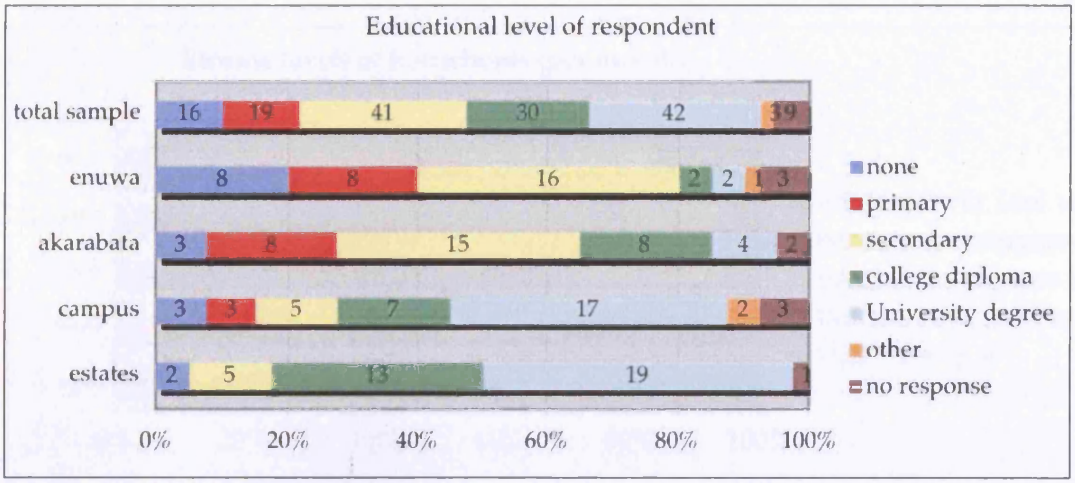


Figure 5-6:Educational level of respondents

32% (51 nos) of the respondents were the head of the household and almost all male, 35% (56 nos) were wives of the household head, and 27% (37) were children, and a few of the respondents were relatives [mainly children (5%)] or hired help/guests (3%). There were differences between the areas. Eight of the twenty-two household heads and spouses in the Campus had a university degree (36%), thirteen of the twenty-nine household heads/spouses in the Estates had a university degree (44%). One of thirty household heads and spouses in Akarabata, and none of those in Enuwa had a university degree

5.1.3 Social Composition - About the households: -

The household characteristics that were of interest are income and household structure, but variations in income level proved more significant than differences in household structure, because economics is a major constraint on dwelling types accessible to households.

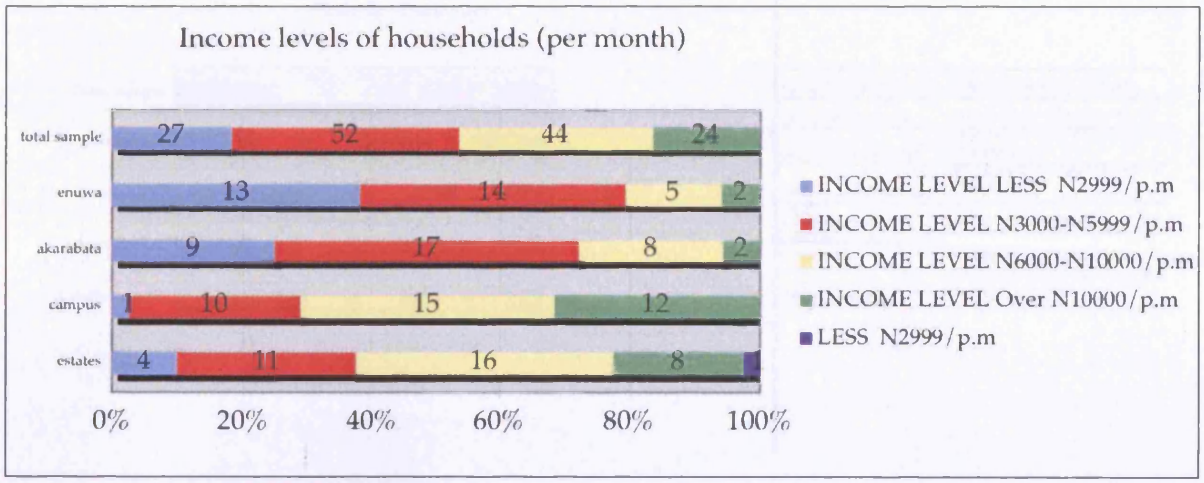


Figure 5-7: Income levels

Questions on expenditure gave useful insight into the households' perception of their economic situation, despite the fact that the figures are usually estimates. Almost a fifth of the sample (17%) rated their expenditure as being in the lowest income bracket [less than N3000 (Naira per month], 32% of all households surveyed rated themselves as average income earners (between N3000-N5999 per month), 27% rate their expenditure as corresponding to a lower-middle income level (between N6000-N10,000), and 15% view themselves as in the middle income bracket (over N10,000). The Campus and Estates have the highest number of middle-income households and Enuwa has the lowest[64].

Six household categories were identified based on the number and age of household dependants, ranging from the young household with all dependants under three years old to the senior citizens with adult dependants who are non-resident.

[64] There have been further devaluation of the Nigerian currency (Naira), but the proportions of the income groups in each area remain fairly stable in comparison to the 1999 Nigeria National Demographic and Health Survey.

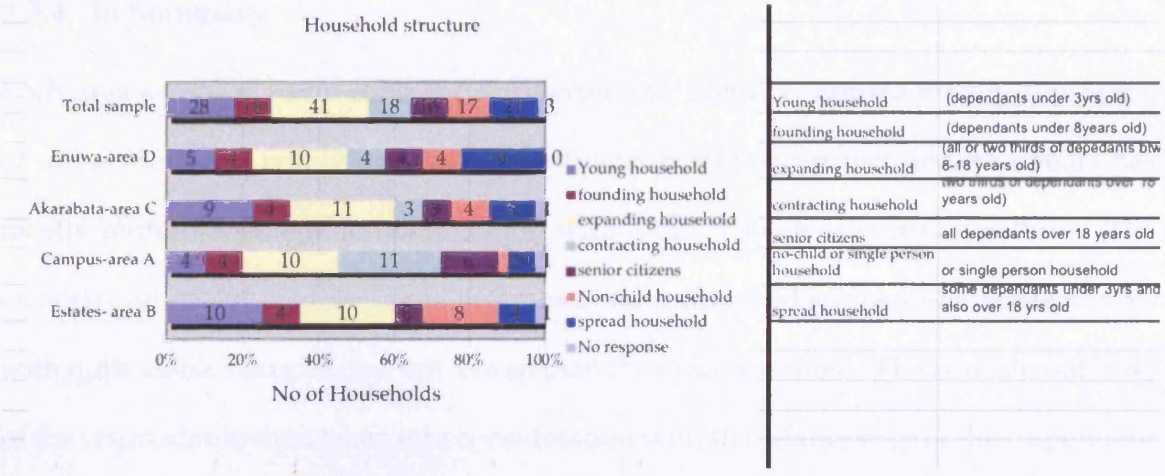


Figure 5-8: Household structure

Expanding and young households were the largest, and second largest household types (25 % and 17% respectively) in the total sample, while young, founding, contracting, senior citizens, and no-child/single person households constituted less than 15% each of the total sample[65]. The number of young households was highest in the estates and Akarabata, the highest numbers of contracting and senior citizen households was in the campus sample, and the highest number of no-child/single-person households was in the estate sample. Founding and expanding households were similarly distributed in all the areas. Although most households were based on nuclear familial relationships, some included non-nuclear, quasi-fostering situations- 5% had young children and housemaids, and 33.7% of the total sample had at least one live-in relative/guest (double the national percentage (16%). The tendency for a household's size to vary affects space.

[65] The nine 'spread' households (13.1%) with depedants under eight years old and also with some over 18 years old mainly occurred in Enuwa, perhaps because people were more reticent about giving information about their children. This inherent reticence also made it not so easy to ascertain the household population, as well as the fact that the concept of who is an inhabitant is more related to lineage rights to the use of the dwelling as opposed to actual physical residence in the dwelling.

3.3.4 In Summary

Each area sampled has a coherent socio-economic identity- Enuwa mainly comprises of owner-occupied family compounds with very stable occupancy, and Akarabata has mostly rented tenement accommodation with a fairly stable occupancy pattern. The campus and estates samples contained mostly flats, detached and semi-detached houses with quite stable occupancies, but less so than the Enuwa sample. The educational level of the respondent when taken into consideration with the relationship of the respondent to the household head, gave a good reflection of the overall educational standards of the households. In several studies, the educational level of the women/wives in a household has been taken as a good indicator of the household standards. As such, the Campus and Estate respondents had the highest number of college-educated respondents and higher income earners, while the Enuwa respondents were the least educated with a high proportion of low-income earners. Akarabata respondents were in the middle; the majority only had primary school education and were low income and lower-middle income earners. The Campus sample had a slightly older population evidenced in the numbers of expanding, contracting and senior citizens, while Akarabata and the estates had more young and expanding households. Enuwa was more evenly distributed over the household stages (See summary of socio economic characteristics below).

Table 5-4: Summary of socio-economic characteristics

	Enuwa	*Akarabata*	*Campus*	*Estates*
Period of construction	Circa late 1880s to1940s	1956-62	1969-1980s	1970s-1990s
Historical reference	contact to colonial period	colonial to post independence	post independence	Transition
Income level of at least 75% of sample	low to average income	low to average income	middle income	middle income
Education level of at least 75% of sample	none up to secondary school	primary up to secondary school	University Degree	University Degree
Tenure pattern for at least 75% of sample	Owner occupied	rented	rented	rented
Control of dwelling for at least 75% of sample	shared facilities	shared facilities	self-contained	self-contained
Household patterns	extended-family dwellings	multi-household dwellings	single-household dwellings	single-household dwellings

5.2 Section B: - Perceptions of domestic space performance

The focus of this section is on how perceived levels of satisfaction with the performance of the dwellings, relate to spatial properties or reflect social dimensions. The main points of interest are discussed in relation to the total sample to provide an overview, and specific areas are analysed in subsequent chapters where applicable. While over 75% of the respondents rated their dwellings as satisfactory or good, despite real differences in plan layouts and quality of services, similar proportions of respondents also had complaints about their home, with ninety-two households having had alterations made to their dwellings. Relationships between variables were not quite straightforward- e.g. the extended-family house was given an excellent rating by the highest number of respondents despite its apparent shortcomings; perhaps due to the enduring significance of homeownership, and the importance of the ancestral home in Yoruba culture over other 'requirements'.

More respondents in the Campus and Enuwa had made alterations to the domestic space (about 65% of each area) than the Estates and Akarabata (42% and 57% respectively); most likely a reflection of high levels of services expected from a non-profit landlord in the university, and the freedom enabled by ownership in Enuwa[66]. Almost all the alterations had a bearing on space use - the most common was the provision of new shelves and cupboards, and the conversion of spaces to other functions- commonly from storerooms to bedrooms, and study rooms into guest bedrooms, though a few unusual ones occurred e.g. a garage converted to a dining room taking advantage of a door linking the garage close to the kitchen[67]. The types of changes made in the areas are quite similar except for the Campus where more spaces had been converted to other uses different from the original choice of the architect.

[66] This seemed to be the case (check the cramers value).

[67] Examples of changes to the exterior of the domestic spaces include painting, plastering of exposed mud walls, putting in glass louvre panes to replace wooden windows, architectural metalwork on windows for added security, painting of metalwork.

Table 5-5: Changes made to dwellings

Types of changes	total	%tage	Enuwa	%tage	Akarabata	%tage	Campus	%tage	Estates	%tage
new shelves, cupboards, etc	55	53.4%	11	47.8%	16	64.0%	18	50.0%	10	52.6%
spaces converted to other use	21	20.4%	1	4.3%	1	4.0%	14	38.9%	5	26.3%
exterior (painting walls etc)	13	12.6%	8	34.8%	3	12.0%	1	2.8%	1	5.3%
rooms added to the house	6	5.8%	0	0.0%	4	16.0%	0	0.0%	2	10.5%
spaces in the house altered	5	4.9%	0	0.0%	1	4.0%	3	8.3%	1	5.3%
building rebuilt in new material	3	2.9%	3	13.0%	0	0.0%	0	0.0%	0	0.0%
total no. of alterations	103		23		25		36		19	

Additional rooms (usually lean-to sheds) were mostly provided by those in rental accommodation, while rebuilding or changes to the exterior was by owner-occupiers. The provision of new shelves/cupboards was mainly by those in poorer, shared accommodation that had minimal built-in storage provided. Changes to space functions seemed to be influenced by educational levels and the type of unit, suggested by the fact that seven of the ten respondents who made this alteration had college degrees, and most lived in self-contained dwellings. Alterations were mainly in response to perceived shortcomings of the domestic space, but many focussed on the plan configuration, albeit in generic terms; a point buttressed by the fact that the most popular alteration on respondents 'wish list' related to configuration: - 'to add new rooms'.

5.2.1 Perceptions on domestic space performance

Ten aspects of the dwelling were identified by the respondents as the most liked components of their homes, and the most commonly cited were a) the geographic location of the dwelling, b) design/style, and c) the size of the dwelling which accounted for over two thirds of all responses. Eighteen different reasons were given to describe

these features, and the most frequently mentioned reason, particularly in connection to the size of the dwelling, was the availability of spacious & ample storage space; suggesting that storage is a very relevant aspect of spatial performance. Aspects of domestic dwellings mentioned in relation to satisfaction (and dislikes) focussed on -

1) spatial properties related to the interior of the dwelling i.e. descriptions pertaining to the configuration of the interior, or feature of the physical building such as the design/ style of the house, size of the house, the provision of adequate bathroom and toilet facilities and fixtures, etc (highlighted in blue in Table 5-6, p129). 2) Spatial features related to the exterior of the dwelling - the geographic location and accessibility of the dwelling within the urban setting, (highlighted in yellow), and 3) Non-spatial qualities of the dwelling - intangible attributes such as home ownership, condition of the structure, ventilation and privacy (highlighted in pink).

The main aspects in Table 5-6 are discussed below.

1) References to geographic location focused on ease of access to the workplace and facilities (schools, hospitals, and retail opportunities), but the most frequently sited reason is the quiet and serene nature of an area. A few linked location to good design and adequate fixtures, the preponderance of particular dwelling types, adequacy of pipe-borne water in the area, low density, and privacy in the neighbourhood. All these were embedded in the 'concept' of location, which seemed to reflect both *private,* and *public* meanings according to Richins (1994a).

2) References to design/style were also for diverse reasons, but rarely did it infer recognition of formal architectural style, rather it was strongly connected to storage space availability in each room, to general aesthetic appreciation (of the facade), the type

of unit, newness of the structure or to what some respondents perceived as a sense of 'modernity' of the building. A few connected design/style to the quiet/serene nature of their area but this was by respondents in noisier shared multi-household dwellings, and seemed to be a reflection of their aspirations. The 'compactness' of the plan, secure design, cross-ventilation, adequacy of numbers of bedrooms, separation of public from private areas, good quality fixtures (bathroom and toilets), pipe-borne water, and the provision of a garage, were more reflective of individual situations and were only mentioned by a few respondents.

3) The size of the house was mentioned by about 15% of the respondents; most of whom, were in the two higher income brackets, but the emphasis was in connection to storage and in relation to metric size. Only a few related house size to the compactness of the plan (in terms of how spaces in the plan were connected together), the number of bedrooms, space for outdoor activities, and the ease of cleaning.

4) About 12% of the sample made reference to fixtures and services (toilet, bathroom, water and electricity provision), but this was quite relative as various sections of the socio-economic groups were satisfied with differing standards. Many liked their fixtures and services because of the size & storage in the bathroom, and a few related it to the quiet and serene surroundings, the type of unit- (whether self contained or shared facilities), cross ventilation of service spaces, and the security of service spaces (whether service spaces are integral or separate from the dwelling). Non-spatial aspects like access to better quality fixtures, were more noted by respondents in dwellings with shared facilities for whom, such facilities were uncommon in these types of housing.

Table 5-6: Liked aspects of the domestic space and reasons for liking them

Table refers to liked aspects that constitute at least 5% each of the total number of responses

Reasons for liking domestic space	location	design/style	size of house	services- toilet	ownership	
spacious&ample space for storage	5	5	18	1		29
quiet & serene area	16	3		1		20
good design & adequate fixtures	3	2		14	-	19
No rent to pay-owned outright		1			12	13
closeness to workplace&facilities	13					13
type of unit, selfcontained	2	7		1	1	11
retail opportunities	8					8
good finish/structure		4	1			5
total	47	22	19	17	13	

spatial - internal features spatial -external features non- spatial features
conflict btw feature and reason in terms of spatiality

5) Ownership of the dwelling was liked mainly because most homeowners owned their home outright, as mortgages are a rare way of home financing in Nigeria. A few also highlighted the psychological benefits of not having to deal with a landlord or co-tenants, but none of the tenants in the sample dwelt on this as a negative aspect, though home ownership remains a powerful concept in Yoruba culture. Admittedly the lack of negativity on this issue from tenants, might be because not many realise their aspirations in the commercial housing market as opposed to inheriting property.

The fact that the location of the domestic space within the urban network, accounted for a third of the liked features, supports the view that the domestic space, in this context, is rarely judged in isolation as a 'haven', but as embedded in the 'world' beyond. Another interesting point is that some spatial liked aspects were sometimes explained in non-spatial terms e.g. design/style, reflecting the influence of non-spatial concepts on how space is 'judged', and how social expectations influence individual judgements via awareness of other ideas held by other groups or cultures.

Nine aspects of the domestic space were mentioned in relation to dissatisfaction, with seventeen reasons offered in explaining these negative aspects. Many of the liked aspects were mentioned in the list of disliked aspects, but new features also emerged: - maintenance problems; a non-spatial issue and a significant feature in the list of dislikes, and complaints about the lack or inadequacies of the kitchen and bedrooms provided (see Table 5-6). The most frequently mentioned disliked aspects were a) inadequate fixtures and services and b) poor maintenance, which is quite understandable since 75% of the domestic spaces surveyed are rented, and households are at the mercy of landlords for repairs particularly in tenements. The main features disliked are outlined below.

1) Complaints about fixtures and services related to inadequacies or absence of facilities (toilet/bathroom), the maintenance of the fixtures provided in them, and the lack or inadequacy of water/electricity supply. Similar to the list of liked features fixtures and services were considered problematic for a number of more individualistic reasons like location, and the waterlogged condition of the facility.

2) Complaints about maintenance, generally occurred due to non-spatial reasons, such as poor maintenance by the landlord, inadequate facilities, total absence of facilities, lack/ poor electricity & water supply, size of spaces being too small, and the old-fashioned/old age of the building structure. The reasons are practical and reflect individual conditions, as well as problems affecting the country as a whole. e.g. irregular electricity supply.

3) Complaints about the design/style focussed mostly on spatial assessments- the small size of rooms, the old fashioned/old age of the design, the 'European-ness' of the design which they considered unsuitable for their lifestyle & the inadequate number of their bedrooms. A few also decried the 'dormitory' design of the tenement units, lack of storerooms, and poor sound insulation.

While similar aspects of the domestic space were identified in relation to satisfaction and dissatisfaction with its performance, these were generally in inverse relationships. Aspects that were most liked such as geographic location and size of the house are mentioned a lot less in the list of dislikes, and references to fixtures & services are twice as much in the 'dislike' list as in 'like' list. Design/style and the fixtures & services on the other hand featured strongly in both lists, reflecting poor supply of water and electricity differences in many parts of Ile-Ife except on the Campus. The Campus has independent water supply, and supplementary electricity supply which made remarks about fixtures and services in the area a mostly positive attribute.

Table 5-7: Comparison of main aspects of likes and dislikes

Likes	count	%tage**	**Dislikes**	count	%tage**
geographic location & access	53	32.7%	fixtures & services*	50	26.0%
design & style	33	20.4%	maintainance	25	13.0%
size of the house	26	16.0%	design & style	24	12.5%
fixtures & services*	20	12.3%	nothing	22	11.5%
ownership of the dwelling	13	8.0%	geographic location & access	17	8.9%

Surprisingly, no complaints were made about lack of privacy despite the fact that many units had shared facilities and people lived in close proximity to other households, suggesting tangible differences in what privacy means in this sample. This is also reflected in the fact that only six people commented on the inadequacy of the number of bedrooms available, despite the fact that forty households had only one bedroom space, and most households had at least three/four inhabitants.

Table 5-8: Disliked aspects of the domestic space and the reason for them

Table shows aspects that constitute at least 5% each of the total responses.

Reasons for disliking domestic space	fixtures & services	maintanance	design/style	geographic location&access	condition of structure	ventilation	kitchen
poor maintanance of building fabric	3	16	1		9	1	1
inadequate facilities (bathrm/toilet)	15		1	1	1	1	1
no/poor elec. & water supply	18				1		
some room sizes ar too small		1	2				6
old-fashioned/old age		1	8		2	1	1
poor ventilation	1	2				7	1
absence of facilities (bathrm/toilet)	8				1		

* incl. Poor lighting, poor sound insulation, badly designed door openings, 'dormitory' design, inadequate storage

spatial - internal features; spatial -external features; non- spatial features; conflict btw feature and reason in terms of spatiality

5.2.2 Satisfaction with the domestic space in relation to specific activities

Respondents' comments on the performance of the dwellings specifically for sleeping, eating, cooking, receiving guests, and family relaxation were similar to the points outlined above: - Perception is shaped to some extent by expectations of what is comfortable or desirable. For instance, over 80% of respondents rated their home as efficient for the activities above, despite the fact that many regularly utilised the living room for sleeping, and only forty-six households had a designated dining space. More than three quarters of respondents also considered their domestic space satisfactory for miscellaneous activities such as trading, praying & prayer meetings, games, physical exercise, for which the dwelling may not have been specifically designed, but for which many had successfully co-opted their domestic spaces to deal with such activities. This is suggestive of a degree of non-specificity or generality that allows for spaces of a fixed situation to accommodate a variety of uses, described by Manum (2005) as an intrinsic property of space dependent on spatial characteristics of a space/room (explored further in chapter 6), and by Hillier and Hanson (1984) as a generic function of space. While there were very few differences in the responses in relation to gender, or generational gaps, the older generation were more interested in the performance of the dwelling for trading, and their assessments of the performance of space vis-à-vis the miscellaneous activities, showed a strong relationship to the type of unit - especially by respondents in self-contained flats and houses.

The fact that satisfaction is not totally dictated by actual provision was also demonstrated in people's expectations about aspects of storage (built-in elements, designated stores, as well as having large rooms all over the domestic space). Some average income earners who are homeowners, gave storage provision a poor/very poor rating, similar

to many higher income renters, even though their dwellings are of much higher quality. Renters in the lowest income groups in dwellings with very little built-in storage and other infrastructure on the other hand, were much more generous with their ratings. This was partly because low income renters viewed the storage shortcomings of their accommodation as a blessing in disguise, allowing them to accrue their own furniture pieces in hopeful anticipation of when they might be able to build their own homes.

Perceptions of satisfaction seemed to relate to social expectations, which directly feeds into individual ideas of convenience, and becomes the 'yardstick' against which satisfaction was measured. Expectation is thus a composite *mediated through social filters,* such as a) taste, b) levels of exposure to ideas of what are standard and satisfactory through education, and from other cultures, via media (mainly t.v. and radio in Nigeria)[72] and also c) access to technological innovations in domestic processes. This provides some explanation of the paradox between low provision and great satisfaction, versus higher provision and lower levels of satisfaction or more critical appraisal of space performance; links which have also been identified by Belk 1984, Van Eijck(1999).

5.2.3 Effect of Socio-economics and spatial variables on response patterns

Of the main socio-economic variables –the strongest effects on respondents satisfaction with their dwelling were from tenure, income, length of occupancy and, in a limited way, dwelling type and generational differences; mostly non-spatial factors. Dissatisfactions, though, were more driven by spatial consideration- the type of unit, and to some extent by the income level of the household. Table 5-9, p135 contains the correlation between the variables, the most liked, and the most disliked aspects of the domestic space.

Table 5-9:Correlation of variables and liked aspects of the domestic space

Variable	chi-sq	cramer's V	P-Values	Effect on liked aspects	chi-sq	cramer's V	P-Values	Effect on disliked aspects
tenure	56.057	0.592	<0.0001	very strong evidence	30.435	0.322	0.7302	very little evidence
occupancy	62.101	0.36	0.0107	some evidence	47.742	0.315	0.0912	weak evidence
income	75.296	0.392	0.019	some evidence	71.591	0.329	0.0152	strong evidence
type of unit	66.757	0.323	0.0818	weak evidence	80.761	0.355	0.002	weak evidence
age	67.539	0.325	0.0724	weak evidence	69.622	0.33	0.0223	weak evidence
gender	7.653	0.219	0.8655	very little evidence	10.818	0.26	0.5446	very little evidence
education	39.159	0.305	0.1822	very little evidence	81.628	0.292	0.204	very little evidence

Tenure strongly influenced the responses: - most respondents in rented accommodation focussed on design/style, location, and the size of the house, whilst respondents in owner-occupied houses, focussed most on ownership, and location (see Table 5-10). Homeowners did not necessarily envy renters, while many renters seemed to view the generous provisions of their accommodation as adequate compensation, though it is noted that some were home owners in their hometown, or Ile-Ife itself. The effect of tenure on dissatisfaction was minimal; owner-occupiers were slightly less critical about their homes, probably because ownership more than made up for other shortcomings.

Table 5-10: Features Liked split by tenure[68]

Features Liked	**owner-occupied**	**%tage**	**renting**	**%tage**
location	6	18.2%	29	**22.3%**
size of house	1	3.0%	23	**17.75**
condition of structure	3	**9.1%**	1	0.8%
design/style	5	15.2%	31	**23.8%**
environment	1	3.0%	15	**11.5%**
privacy	0	0.0%	1	0.8%
environmental factors	0	0.0%	3	2.3%
fixtures & services	2	6.1%	18	**13.8%**
no/size of bedrooms	1	3.0%	3	2.3%
living room	1	3.0%	2	1.5%
ownership of house	13	**39.4%**	1	0.8%
other-access	0	0.0%	3	2.3%
total based on responses	33	100%	130	100%

[68] Table 5-10 is based on the total sample.

Income patterns: - while most respondents in the four income groups mentioned design/ style, and geographic location, there were differences in emphasis (see Table 5-11, p136). The lowest income group identified home ownership as the most favoured aspect of their domain, while the lower-middle income, and middle-income groups, placed most emphasis on the size of the house, and design and style respectively. The average income group placed the greatest emphasis on geographic location, since many lived in rented accommodations that are not well equipped, hence dwelt on other positive aspects. Complaints about location, size of the dwelling, and the number and size of bedrooms and kitchens were slightly greater in the higher income groups, and complaints about the condition of the building structure, and design and style were understandably higher in the lowest income group. In general, higher income respondents were slightly more critical about their dwelling, and the highest numbers of satisfied residents were in the lowest income groups were the owner-occupiers where concentrated.

Table 5-11: Features Liked split by income levels

Features liked	low income	%tage	average income	%tage	middle income	%tage
location	3	12.5%	15	27.3%	15	20.3%
size of house	1	4.2%	4	7.3%	19	25.7%
condition of structure	2	8.3%	1	1.8%	1	1.4%
design/style	4	16.7%	14	25.5%	15	20.3%
environment	2	8.3%	5	9.1%	6	8.1%
privacy	0	0.0%	4	7.3%	1	1.4%
environmental factors	1	4.2%	0	0.0%	4	5.4%
fixtures and services	3	12.5%	4	7.3%	5	6.8%
no/size of bedrooms	1	4.2%	3	5.5%	0	0.0%
living room	0	0.0%	1	1.8%	2	2.7%
ownership of home	7	29.2%	3	5.5%	4	5.4%
other- access	0	0.0%	1	1.8%	2	2.7%
Total	24	100%	55	100%	74	100%

Gender differences: - There was little difference in the proportion of men and women who liked the size of their house, fixtures & services, provision & size of the living room, though there was a slight male bias for design and style, condition of the area, and the condition of the structure. This was probably because men feel responsible for maintenance issues, and to provide accommodation in a good area. A slight female bias for geographic location & access, number and size of bedrooms, and privacy as admired aspects of the dwelling was noted. Male respondents complained more about design and style, location and access, ventilation, and maintenance than females, probably for the reasons above, and there is only one category in which females made more complaints than males - the fixtures and services. Similar proportions of male and female respondents complained about the size of the house, and the condition of the structure.

Table 5-12: Features liked split by gender

likes	Male	%tage	Female	%tage
design/style	14	23.3%	22	21.4%
location	9	15.0%	26	25.2%
size of house	8	13.3%	16	15.5%
fixtures & services	7	11.7%	13	12.6%
environment	7	11.7%	8	7.8%
ownership of house	6	10.0%	8	7.8%
condition of structure	3	5.0%	1	1.0%
no./size of bedrms	1	1.7%	3	2.9%
environmental factors	2	3.3%	1	1.0%
living room	1	1.7%	2	1.9%
other- secure access	2	3.3%	1	1.0%
privacy	0	0.0%	1	1.0%
nothing	0	0.0%	1	1.0%
total	60		103	

These results are similar to observations by Dittmar (1992) that, while gender differences in relation to special (home) possessions are real, there is more convergence in terms of the reasons given for these attachments. Overall, more male respondents complained about their dwelling than females but, surprisingly, there was little gender variation in complaints about the kitchen, a traditionally 'female' space although the fact that the females complained less might have a bearing on this.

Table 5-13: Features disliked split by gender

dislikes	Male	%tage	Female	%tage
design/style	9	13.8%	8	7.8%
location	3	4.6%	1	1.0%
size of house	3	4.6%	4	3.9%
fixtures & services	10	15.4%	25	24.5%
environment&exterior	3	4.6%	3	2.9%
condition of structure	5	7.7%	7	6.9%
no./size of bedrms	2	3.1%	4	3.9%
kitchen	3	4.6%	5	4.9%
environmental factors	4	6.2%	3	2.9%
secure access	3	4.6%	1	1.0%
maintanance	9	13.8%	10	9.8%
other*	0	0.0%	1	1.0%
nothing	11	16.9%	30	29.4%
total	65		102	

Age differences: - The line between **age difference** and what respondents liked about their domestic space was not strong. The design/style of the dwelling was most favoured by the youngest age group (15-24 year olds), though popular across board. Adequacy of fixtures and services was viewed positively mostly by the youngest group, with interest decreasing with increasing age, which is quite logical because in Yoruba culture, young members of the household (including children) are responsible for many chores, and probably appreciated the adequacy of services like pipe-borne water more.

The geographic location and the size of the house was of greater interest to the 25-34 year olds and the 35-44 year olds, probably because the 25-44 year olds conducted more trips, and were responsible for determining the location of the dwellings in the first instance. The opposite pattern existed with structural condition and home ownership, which was mostly an adult concern.

The number of respondents who complained about design and style, condition of the structure, and maintenance increased a lot from the youngest to the oldest age groups. This is understandable, as the older age groups, are generally responsible for the provision of accommodation and may notice the inadequacies more keenly, but, most of the complaints about fixtures and services are from the 2 younger age groups making it a significant feature in terms of likes and dislikes for these age ranges. In all, the younger age groups were more focused on the quality of fixtures and services, and the dwelling size, and the two older age groups on the condition of the structure and maintenance.

Table 5-14: Liked aspects split by age group

likes	15-24yr	%tage	25-34yrs	%tage	35-44yrs	%tage	over 45yr	%tage
design/style	9	27.3%	6	13.3%	13	26.5%	8	22.9%
location	5	15.2%	14	31.1%	10	20.4%	6	17.1%
size of house	3	9.1%	9	20.0%	8	16.3%	4	11.4%
fixtures & services	6	18.2%	5	11.1%	7	14.3%	1	2.9%
environment	2	6.1%	4	8.9%	5	10.2%	4	11.4%
ownership of house	0	0.0%	2	4.4%	4	8.2%	8	22.9%
condition of structure	1	3.0%	1	2.2%	0	0.0%	2	5.7%
no./size of bedrms	4	12.1%	0	0.0%	0	0.0%	0	0.0%
environmental factors	1	3.0%	1	2.2%	1	2.0%	0	0.0%
living room	0	0.0%	2	4.4%	0	0.0%	1	2.9%
other- secure access	2	6.1%	0	0.0%	0	0.0%	1	2.9%
privacy	0	0.0%	0	0.0%	1	2.0%	0	0.0%
nothing	0	0.0%	1	2.2%	0	0.0%	0	0.0%
total	33		45		49		35	

Table 5-15: Disliked aspects split by age group

dislikes	15-24yr	%tage	25-34yrs	%tage	35-44yrs	%tage	over 45yr	%tage
design/style	1	2.7%	4	8.5%	5	10.4%	7	20.0%
location	1	2.7%	1	2.1%	1	2.1%	1	2.9%
size of house	2	5.4%	0	0.0%	1	2.1%	3	8.6%
fixtures & services	8	21.6%	19	40.4%	5	10.4%	5	14.3%
environment&exterior	0	0.0%	2	4.3%	3	6.3%	1	2.9%
condition of structure	1	2.7%	1	2.1%	4	8.3%	6	17.1%
no./size of bedrms	1	2.7%	3	6.4%	2	4.2%	0	0.0%
kitchen	3	8.1%	1	2.1%	2	4.2%	2	5.7%
environmental factors	2	5.4%	2	4.3%	3	6.3%	0	0.0%
secure access	1	2.7%	0	0.0%	3	6.3%	0	0.0%
maintanance	3	8.1%	2	4.3%	8	16.7%	6	17.1%
other*	1	2.7%	0	0.0%	0	0.0%	0	0.0%
nothing	13	35.1%	12	25.5%	11	22.9%	4	11.4%
total	37		47		48		35	

5.2.4 Summary: -

The 'language' employed by respondents in assessing their dwellings showed a bias towards utilitarian issues, and its relationship to wider community, but some intangible concepts are noted. Firstly, variation in expectation seemed to underline people's assessment of their dwellings, because similar language was used in describing a variety of dwelling types. Differences in expectations were along income and educational levels; - lower-income homeowners placed a high premium on ownership, while more educated respondents with higher incomes placed a premium on the comfort derived from their self-contained dwellings with quality fixtures and services. Tenement renters on average incomes, on the other hand, seemed to have lower expectations, and were less critical of their accommodation. Most of the reasons that respondents gave for liking their homes focussed on aspects valuable to the household than on private ones.

There was a stronger focus on spatial aspects and occasionally on configuration aspects, more than non-spatial aspects although non-spatial reasons were often used to explain spatial features. This highlighted the influence of extrinsic factors such as the influence of ideals, on how respondents viewed their dwelling rather than just the intrinsic properties of the aspect in question. Spatial features dwelt more on what Merleau-Ponty (1945) described as the objective features though this was not fully dictated by intrinsic properties, as many of the 'objective' features varied considerably in the sample e.g. plan layout, environmental issues (noise levels, drainage, etc).

In terms of the spatial dimension, the issue of generality over specificity in space use was highlighted by the way many households adapted spaces in the dwelling to accommodate unanticipated domestic activities. Certain variables showed a consistent influence on the respondents' perception of the performance of their domestic space:
- The form of tenure played a strong role in respondents' satisfaction with the dwelling, as the ownership of one's home is an important aspect of Yoruba culture. Income levels also had a strong impact, although often this impact was exercised via the type of units that households could afford which in turn made people in certain units more exposed to specific problems. Generational and gender differences had more of a limited effect on how people perceived the favourable and unfavourable aspects of their domestic space, but overall, more male respondents had complaints about their domestic space, than the female respondents. The effect of generational differences found was consistent with other studies, with some similarities between the comments of the younger age groups and between the two older age groups. The younger age groups focused most on the quality of fixtures & services, while the two older age groups were more concerned with condition of the structure and maintenance.

Respondents living in better conditions were also more critical about their dwelling in terms of privacy, though this was not a strong feature on the list of liked or disliked features. Only a few of the respondents who live in close proximity to other households made any reference to being bothered by a lack of privacy, supporting Newell (1998) emphasis that the 'how' of privacy i.e. the mechanisms that people employ to achieve privacy, vary widely across cultures and, it is suggested, also varies across social strata.

Finally, the size of physical space and the adequacy of storage emerged as important aspects of domestic space use. Respondents with higher income and education living in housing with better storage facilities also complained more about it, suggesting that storage needs were influenced by aspirations, and the accumulation of possessions, more than to the size and stage of the household, or the intrinsic properties of activities or objects. Tenement dwellers were more generous in their appraisal of their dwellings than family compound owner-occupiers, or the higher income earners in self-contained flats and houses, raising the debate about adjustments that are ongoing in the domestic space to reconcile reality with aspirations.

Consequently, we turn to the spatial analysis of the domestic types that the respondents have expressed their views about,. Whilst the results of this chapter was presented in relation to the whole sample, the next chapter deals with the analysis and the identification of configurational types, and how this relate to some of the perceptions and socio-economic variables discussed here.

Chapter 6: Configurational Space Patterns

This chapter focuses on the analysis of the floor plans surveyed in geometric and syntactic terms, in order to outline the spatial rules that shape the types identified. The chapter identifies enduring and transformed spatial elements in the geometric and syntactic types, and discusses how congruent these are in relation to lifestyle patterns.

The results show a strong correlation between geometry and genotype, and confirms the existence of a traditional syntax and geometry, and also provides evidence of newer rules that govern the new genotypes (and geometries). There is also a distinct congruence between socio-economic variables and geometry and syntax, and with specific lifestyles.

6.1 Geometry and Syntax: Its development in the study area

Floor plans were analysed to identify configurational types, and to outline differences in the geometries and inequality genotypes. Variations between core elements of each geometry and genotype served as snapshots for outlining how specific spatial principles were representative of lifestyle choices.

Questions to be answered: - The main question addressed from a geometric point of view is whether variations in the geometic types based on criteria outlined in chapter four, that is, a) increased separation of the cores, b) increased elaboration of the *threshold* between the exterior and interior spaces, c) separation between visitors and inhabitant pathways within the dwelling, and d) increased reliance on transition spaces for movement between different parts of the dwelling, has a positive correlation with increased socio-economic levels, and with distinct lifestyle differences.

Syntactically, the aim was to identify the inequality genotypes that underpin the one hundred and twenty-six floor plans surveyed. The question addressed in this respect is whether differences in social conditions, marked by educational and income differences

of the households are reflected as corresponding differences in the integration and depth values of key space labels - orowa, living room, kitchen, corridor, and bedroom, in the genotypes, and how each type differs from the next. The hypothesis is that space labels with enduring 'personalities' will maintain a stable integration and depth position in relation to other spaces across genotypes, whilst changes in relative positioning of a space label (based on integration and depth measures defined in chapter four), are most likely reflect changes in the identity of resident activities/objects, responses to new technology, or changes in social conditions. The second point of interest in this chapter is the relationship between geometry and genotype, and the effect of geometry on genotype, if any.

6.1.1 Geometric Typing

Six geometric types were identified from the sample based on the criteria above and each floor plan was assessed in the following manner: separation between the living and sleeping cores is identified by a demarcation line between sectors on each plan, where relevant. The elaboration of threshold for the plans was assessed based on the directness of the connection between the front entrance and the main reception space (usually the living room). The lack of a threshold is where the front entrance opens directly into the reception space, a partial threshold refers to where only one intervening transition space separates the entrance and reception area, and an elaborated threshold is defined by the existence of at least two intervening spaces. The separation of visitor and inhabitant circulation is assessed based on whether

circulation between sleeping areas and other parts of the house can occur without conflict with the visitor's route from the exterior to reception areas. The extent to which each type is focussed on transition or function spaces is measured by the transition : function ratio for each plan (recorded as a mean for each geometric type). It is worth noting that the differences between the types are more of a continuum, rather than discrete boundaries. The frequency of each geometric type in the sample areas is in Table 6-1, p145, followed by a description of the types below: -

1) *The double-loaded corridor plan, the most common type in the sample*
2) *The compact non-courtyard type, prevalent with flats,*
3) *The orowa type, based on principal spaces arranged around the orowa*
4) *The courtyard compact plan, compact type with a courtyard.*
5) *The elongated plan, with sleeping spaces along a single-loaded corridor.*
6) *The 'mixed' plan, a compromise between the elongated and compact plans types.*

Table 6-1: frequency of geometric types in each sample area

frequency distribution of geometric types in the 4 areas

	Estates	Campus	Akarabata	Enuwa	
Geometric types	recent(1970's to 1990's)	late middle(1964-1974)	early middle(1954-1962)	earliest(1890's)	total
double-loaded corridor	4		39	16	59
compact (non-courtyard)	27	8			35
orowa-type			1	24	25
elongated	1	14			15
compact (courtyard)	2	10			12
mixed	4	8			12
	38	40	40	40	

Note: two of the houses on the estates did not agree to have floor plans drawn.

note: the most common geometric type(s) in each area is highlighted in red.

The performance of each geometric type in relation to each criterion, which is not a quantifiable measure is summarised in Table 6-2, p146, and includes a ranking of each type reflecting this researcher's assessment of each type in relation to the other types.

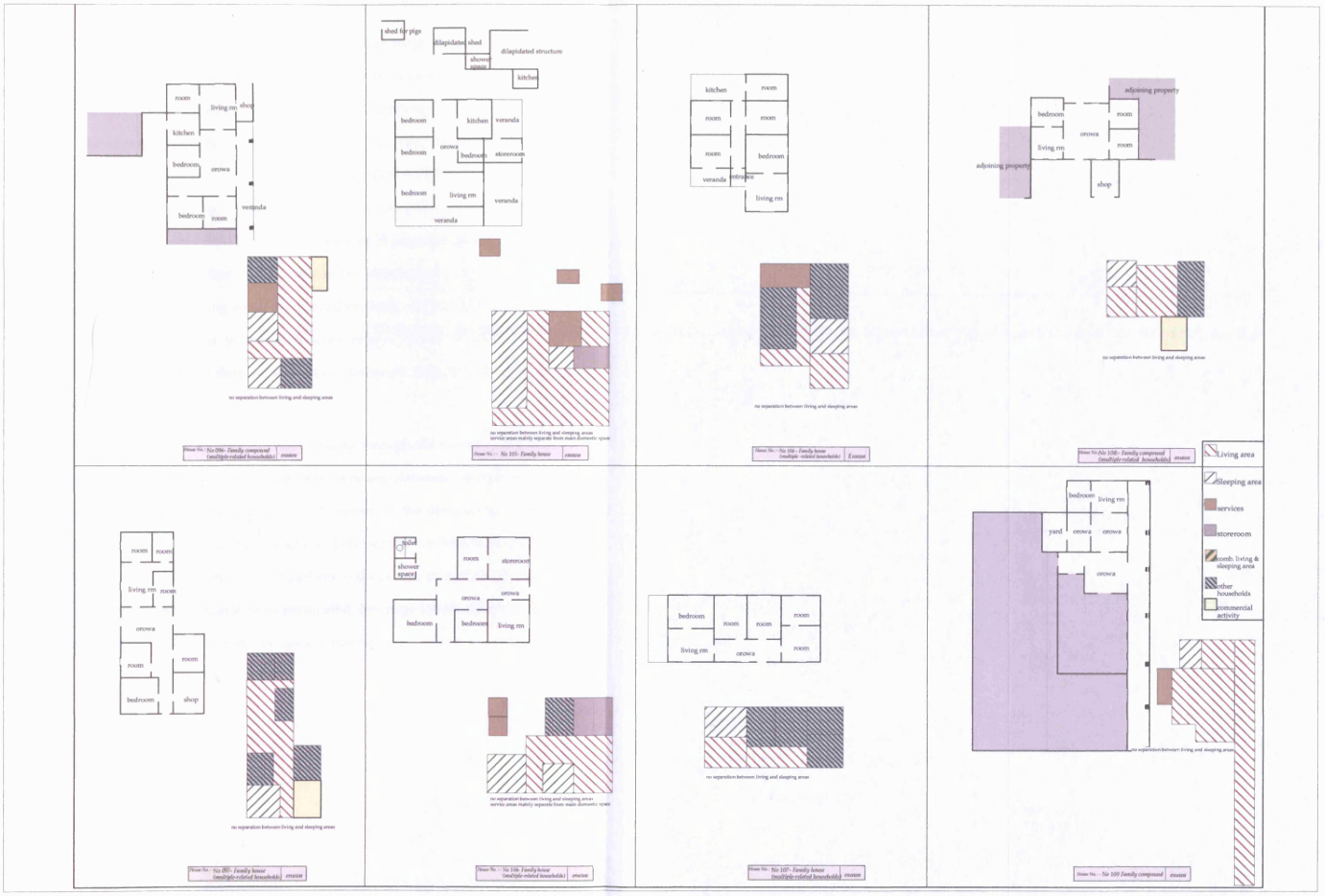
Overall, three shape geometries were found- the compact model [the orowa- which accounts for the majority of the traditional orowa houses, compact (courtyard), and compact (non-courtyard) types], the long-corridor model (the elongated and double-loaded corridor type) and the combination type (the mixed type). The following descriptions are arranged in order of the shape geometries.

6.1.1.1 Description of the geometric types

The Compact model: -

1) Orowa geometric type: - is essentially the traditional housing type, whereby many of the principal (habitable) rooms open off the orowa (hall) . With twenty-five examples, it is third in the geometric type list. The orowa is a multiple function space often used for the reception of visitors and for many household activities (relaxing, cooking, etc). There may be a lobby or front porch that acts as an intermediate space between the front entrance and the orowa, although mostly the orowas links directly to the exterior, and to a side entrance. In all cases there is little/no elaboration of the threshold, and because the habitable rooms usually lead off the orowa, there is no separation between visitor and inhabitant circulation. There is a typical absence of long corridors as spaces often connect directly to other function spaces, which makes the plans fairly compact, reflected in the mean transition: function ratio of 0.181, the lowest of the geometric types (see p148 for examples). There are no separation between living and sleeping cores apart from service spaces that are separated in sheds or outhouses. The orowa geometric type is similar in its performance to double-loaded corridor type, except that movement is largely independent of transition spaces.

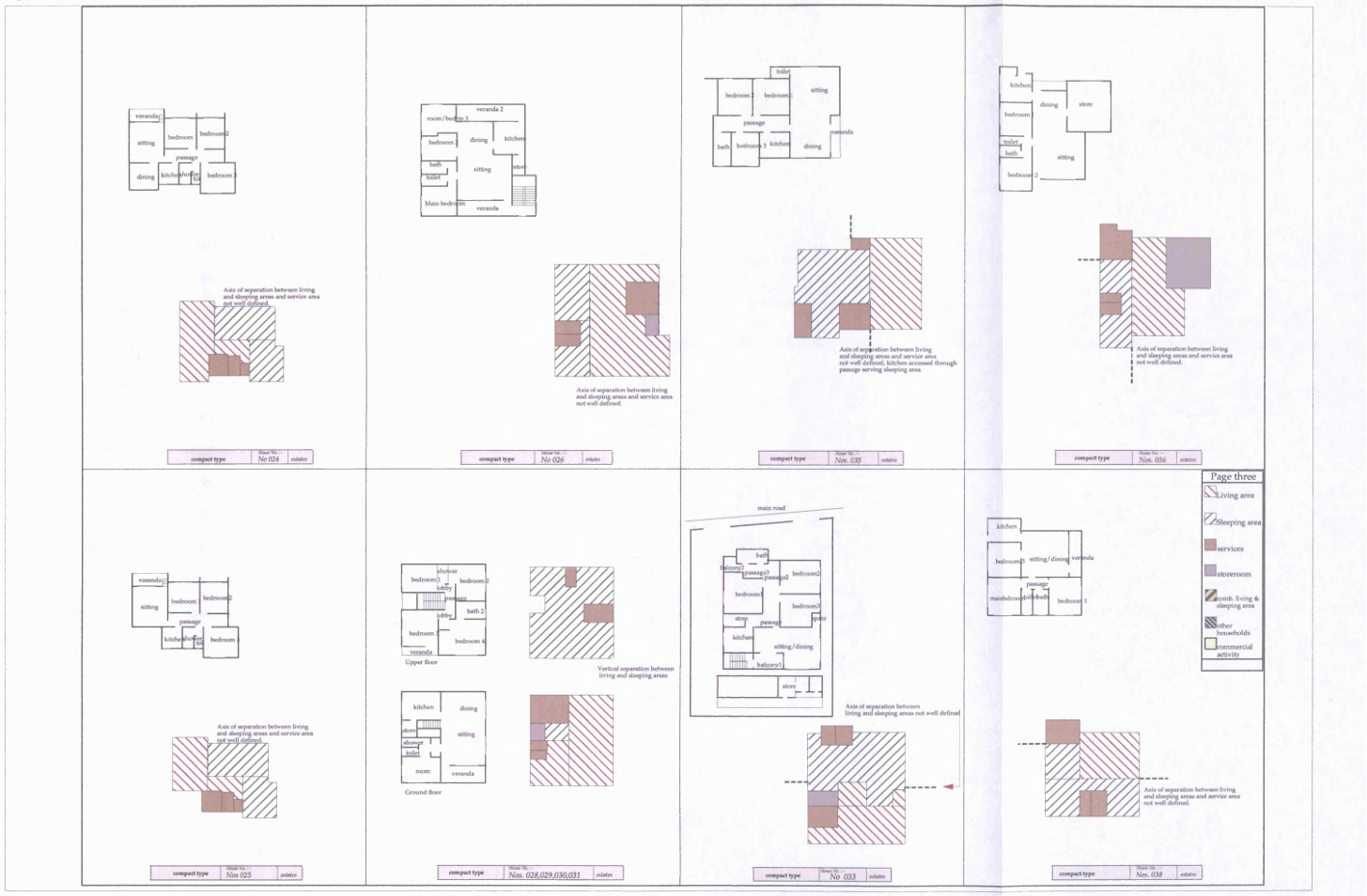
Figure 6-1: Examples of orowa geometric type



2) Compact non-courtyard geometric type: - is a another compact plan type prevalent in the flats where space optimisation is important, but it also sometimes occurred as a two-floor detached house with a compact footprint. Thirty-one examples were found, making it the second most common in the sample. The majority of examples of this type have an axis of separation dividing the sleeping quarters from the living quarters. The plan layout is either a) sleeping areas around a main corridor (often double-loaded) with service space labels organised on subsidiary lobbies, or b) bedrooms sharing a common lobby with a service facility (bathroom). Where the plan is on two floors, separation between the sleeping and living areas is achieved vertically. In both options, there are no long corridors, but its mean transition: function ratio is the second highest of all the types (0.329), showing that a third of all interior spaces are transition spaces- usually short corridors or lobbies.

Visitors can access the living room without passing through the sleeping areas due to the separation of sectors, but the threshold tends to be less elaborate, with the front door often opening directly into the living room. In summary, the compact non-courtyard type's performance on each criterion is half way between the minimalist and maximum end of the scale for each criterion in comparison to the others, except for the degree of elaboration of the threshold that is more minimalist. See page 150 for some examples of this type, and appendix C for other examples of this type.

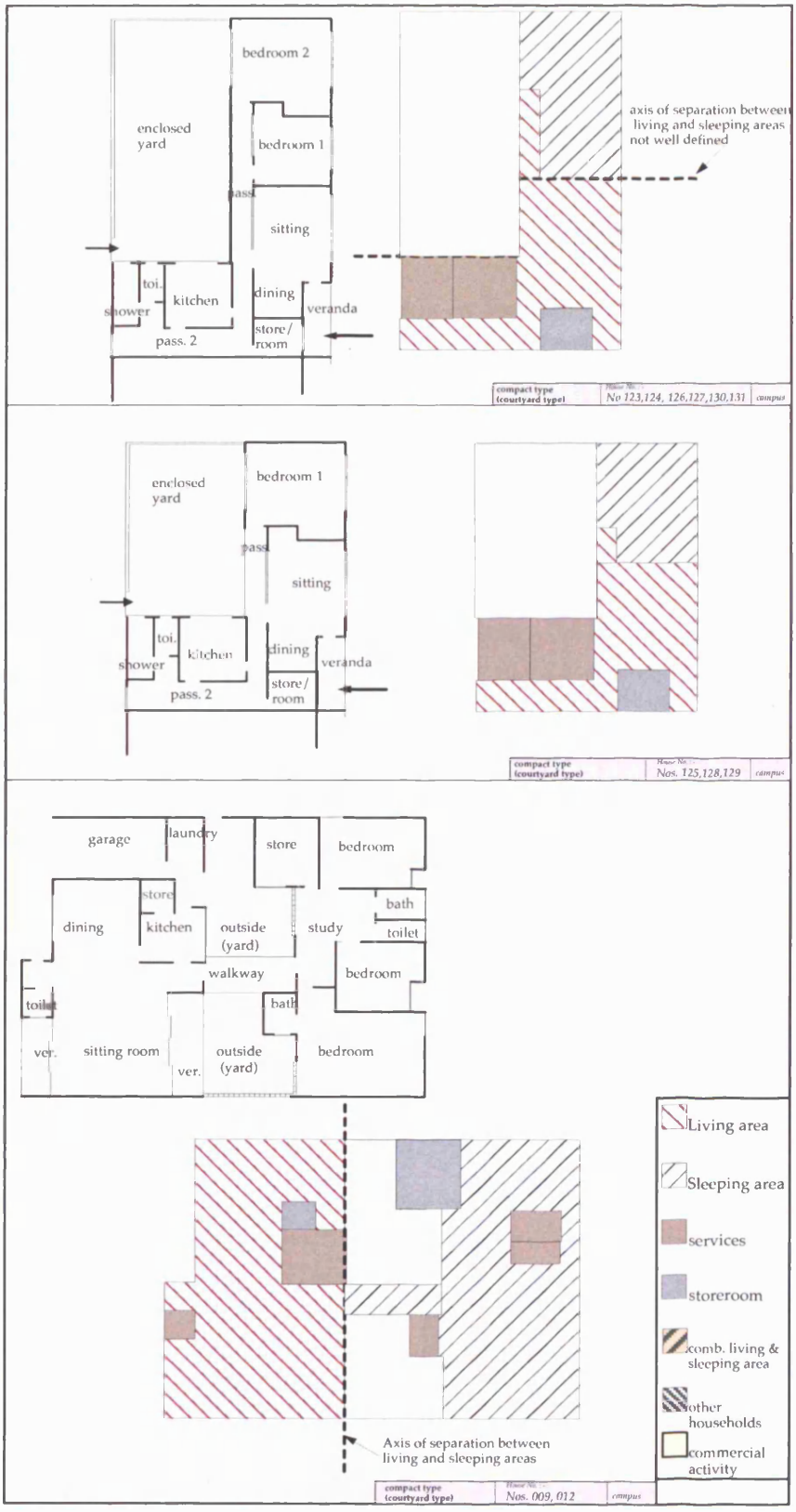
Figure 6-2: Examples of Compact (non-courtyard) geometric type



3) compact (courtyard) geometric type: - The second type of compact plans is the 'courtyard' arrangement of which there were fifteen examples. In most layouts, the sleeping quarters is arranged along one or two sides of the courtyard, or on a short corridor off the courtyard with circulation usually along a corridor down one or two sides of the courtyard. The plans are characterised by short distances between space labels. There are clearly recognisable cores for the sleeping, living and services, but the separation of living quarters from sleeping quarters, is sometimes not strongly demarcated. The most common form of separation is for the service areas to have a separate corridor from the sleeping quarters.

Visitors' access does not conflict with the sleeping areas, and the threshold is well developed in about half of the examples in the form of a series of transition spaces (porch/veranda, hall) before getting to the living room, but in the rest, the front door opens directly into the living room. Plans are connected usually by a corridor or small lobby in the sleeping areas, and through function spaces in the living areas. The mean transition: function ratio for the type is 0.343; the highest of the geometric types meaning that on average, almost 35% of spaces in the dwelling are transition spaces. The compact (courtyard) type is half way between the minimalist and maximum end of the scale for each criterion, except for its strong focus on transition spaces as a means of connecting various parts of the dwellings (see examples overleaf).

Figure 6-3: Examples of compact courtyard geometric type



The Long-Corridor model: -

4) Double-loaded corridor geometric type: - The double-loaded corridor type is the most common in the sample with fifty-eight examples of which thirty-nine are tenements. Only the service core is separated from the rest of the dwelling usually to the back of the house. The living and sleeping spaces usually open onto the central corridor, which is also shared with other households in the tenements (see examples on p136-154). There is only a partial elaboration of the threshold between the front entrance and the household's habitable rooms, because the front door opens directly to the central corridor, or occasionally to a front veranda. There is a no separation between visitor and inhabitant circulation, because the central corridor is used by visitors and other households alike, for circulation and also for storage (of kitchen utensils, implements), or occassionally for cooking. The geometric type is at the minimalist end of the scale for each criterion, but it is slightly more function focussed, indicated by its mean transition: function ratio of 0.216- the fourth highest of the six types.

Figure 6-4: Some examples of double-loaded corridor geometric type

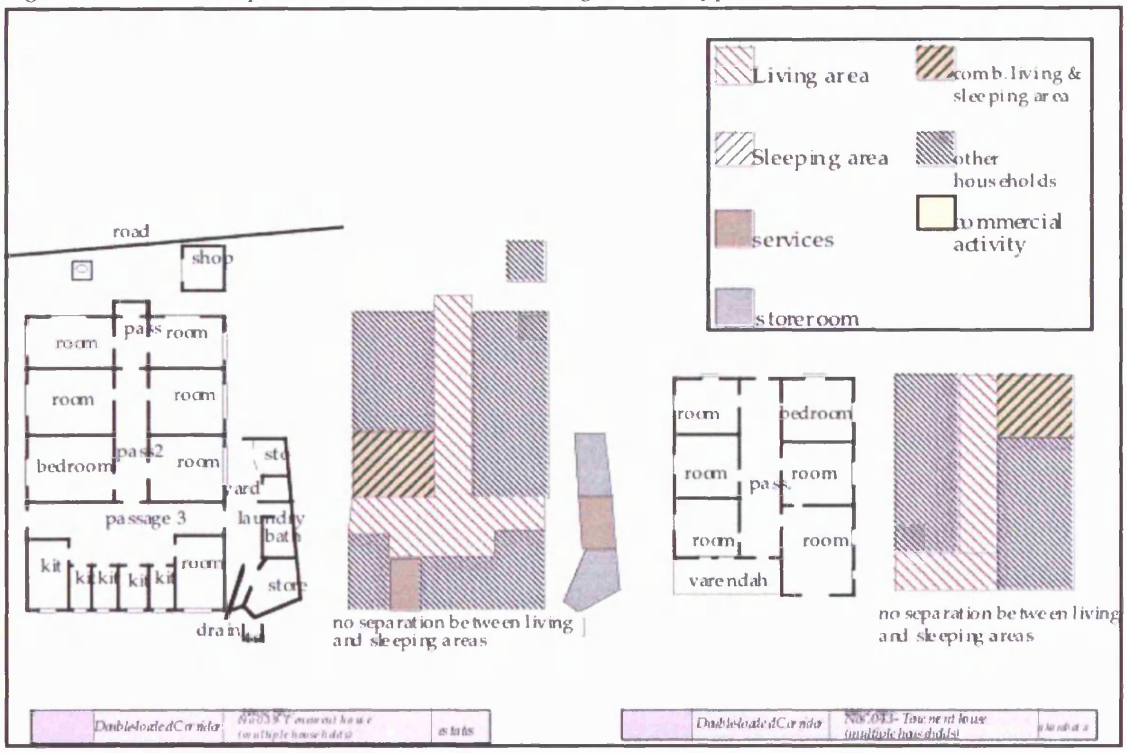
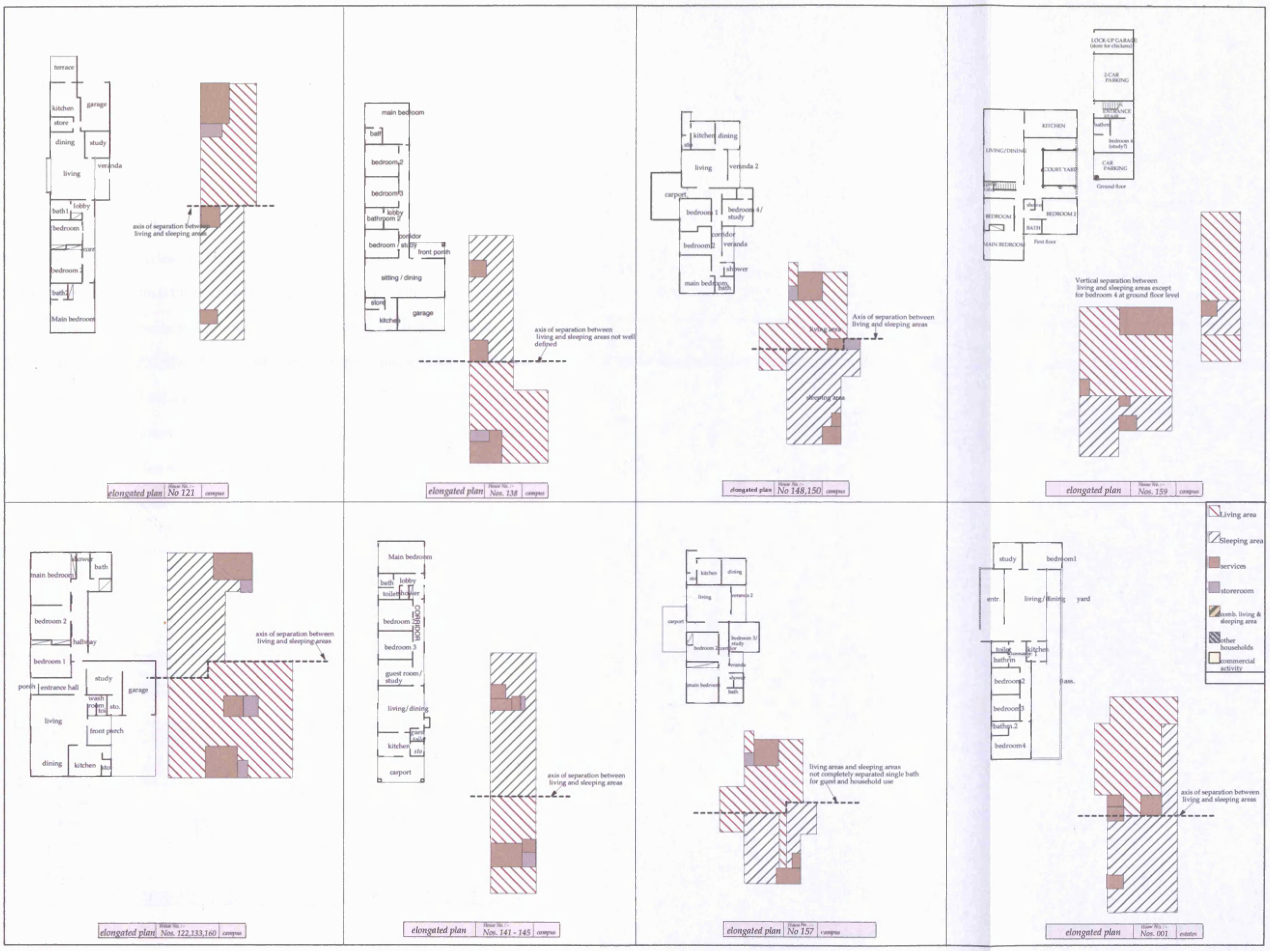


Figure 6-5: More examples of double-loaded corridor geometric type

5) Elongated plan: - Fifteen self-contained plans were identified as elongated layouts with the sleeping spaces arranged along a main single-loaded corridor with a clearly defined axis of separation between the living area and sleeping aspects of the houses. In most cases the service area is a distinct sector though remaining an integral part of the domestic space. The main visitor access is through the living quarters without accessing the sleeping areas and in many cases, a guest toilet is provided within the living areas. In almost all cases the corridor access to sleeping areas is linked directly to the exterior allowing for choice of exiting from the bedroom area without using the main front door.

In contrast to the double-loaded corridor type, the central corridor is mainly for circulation and is not generally percieved as an activity space, though many use it for storage. In most floor plans, it is not possible to move from the sleeping area to the kitchen without passing through the living area unless the external exit in the bedroom area is used, but visitor circulation occurs without conflicting with the sleeping areas. The elaboration of the threshold between the exterior and main reception (living room) space is most developed in this type, involving at least two intermediary spaces- a terrace before the front door, which opens onto a hall that leads to the living room although in some cases, the hall also connects directly to the corridor leading to the bedrooms. Only a small number of internal spaces are pure transition spaces reflected in a mean T: F ratio of 0.217. The elongated plan's performance is nearer the maximum end of the scale for each criterion, except for the T:F ratio which shows that just a few transition spaces are used to organise the dwellings. See examples overleaf.

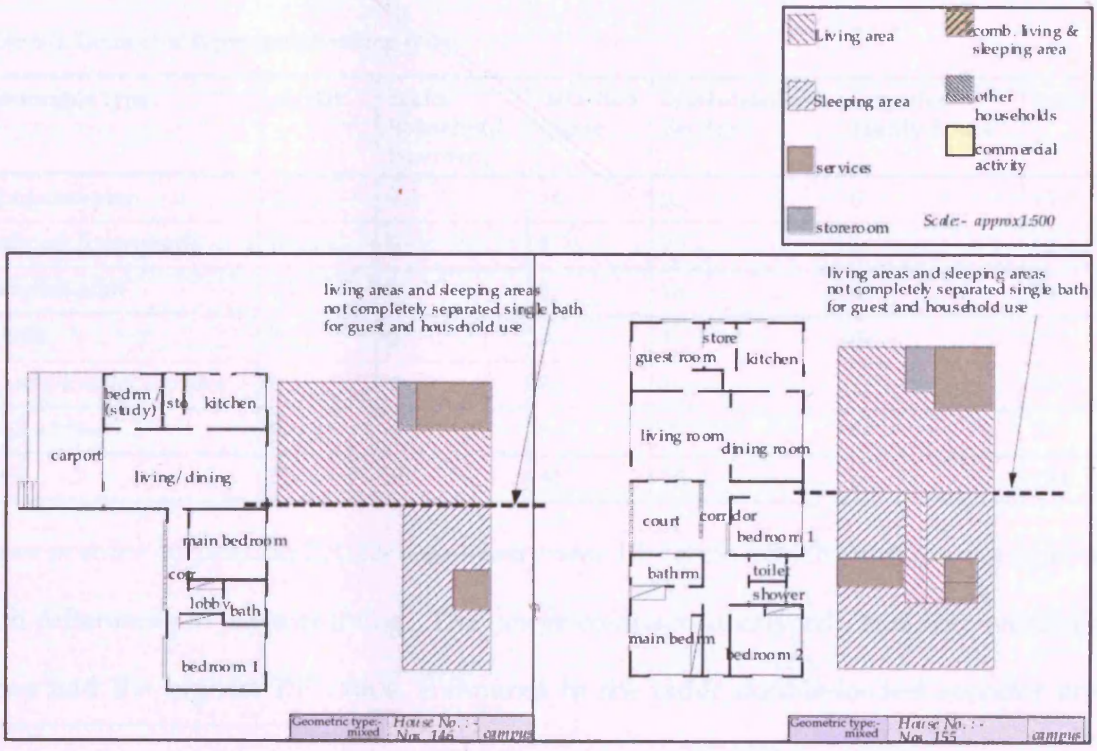
Figure 6-6: Examples of elongated geometric type



THE COMBINATION MODEL: -

6) Mixed geometric type: - Twelve of the plans seem to be a combination of the elongated and the compact plans forms and these are reasonably compact. The living areas are usually linked by function labels whilst the sleeping areas are connected by a double-loaded, truncated corridor system, with one of the lowest mean T: F ratio of 0.213. The axis of separation between the living quarters and sleeping quarters is not strictly organised though the three cores are often clearly identifiable, but direct access for the visitor from the front entrance to the living room is the norm without passing through non-reception areas. The threshold between the exterior and interior is not elaborate (apart from house no. 156) with the front door opening directly into the living room or the principal reception space in almost all cases. Because the study is sometimes located within the sleeping quarters, and the guest room is sometimes in the living sector, only partial separation between living and sleeping areas is often achieved. (see below for examples of the mixed plans).

Figure 6-7: - Examples of mixed geometric type.



6.1.1.2 *Geometry and Spatial Variables*

The geometric types were assessed for how each relates to : - a) the type of dwelling unit, i.e. a flat/tenement/house or family compound, b) the ratio of habitable rooms to total number of cells/rooms (HR:NC ratio), and the extent to which designated storerooms are commonplace in each geometric type, and c) the mean ratio of transition spaces to function spaces (T: F ratio).

The elongated, and double-loaded corridor types each mainly comprised of a single dwelling unit type (see table 6-3), but the two compact types, and the mixed type were more spread, but contain no examples of the orowa house. The orowa geometric type was predominantly but not exclusively made up of the orowa houses. The orowa house and the new flats do not overlap in terms of geometry, while the tenements are almost all double-loaded corridor geometries, and do not overlap with the compact, elongated, or mixed geometric types.

Table 6-3: Geometric types and dwelling types

Geometric type	**s/c flat**	**multi-household tenement**	**detached house**	**semi-detached duplex**	**extended-family house**	**total**
elongated plan	1	0	14	0	0	15
compact (courtyard)	0	0	5	7	0	12
compact plan	13	0	6	16	0	35
mixed	5	0	6	1	0	12
double-loaded corridor	3	41	3	1	11	59
orowa type	0	4	6	0	15	25
total	22	45	40	25	26	158

There is some correlation between geometry and T:F ratios, which suggests correlation with differences in ways of living. The newer compact (courtyard), and non-courtyard types had the highest T:F ratios, compared to the older double-loaded corridor and

orowa types. Although there is an increase in the use of transition space labels (lobbies, corridors and passages) as 'mediators' between function labels in the newer types, the newer types are split into two. The long-corridor models (elongated, and mixed types), which are mostly in the more recently developed estates retain a T: F ratio similar to the orowa type, while the two compact plans utilise a higher proportion of transition spaces. The orowa, and double-loaded corridor types with lower T: F ratios of 0.181 and .216 respectively are less effective in the separation of the living and sleeping sectors, which is consistent with Amorim (1999) and Heitor (2003) finding that higher T: F ratios (.329 and .343) coincide with better separation of the sectors in the newer types.

Table 6-4: Geometric types and Transition: Function ratios

Geometric types	orowa-type	elongated	mixed	double-loaded corridor	compact (non-courtyard)	compact (courtyard)
Transition: function ratio	0.181	0.217	0.213	0.216	0.329	0.343

Earliest -early 1900's to 1950s | Early middle-1956-1964 | late middle- early 1970s-1980s | recent- mid 1970s to early 90s

Finally, the mean number of bedrooms, ratio of habitable rooms, and provision of storerooms per houshold also increased from the old to the new, but the compact types sacrificed a bit on the provision of storeroom, and bedrooms (see Table 6-5, p160). The double-loaded corridor type performed very poorly, with the lowest mean number of bedrooms (1.776), and very low ratio of habitable rooms, and low ratio of storerooms to the total number of cells (0.192 and 26.32% respectively). The link between the proliferation of new functional spaces, numbers of habitable rooms, and geometry is discussed further in chapter seven, but the pattern observed here suggests that the appearance of new spatial types is linked to new functional needs that are sited in new function-space labels.

Table 6-5: Geometric types and spatial factors

Geometric types	Type 1	Type 4	Type 3	Type 6	Type 5	Type 2
	double-loaded corridor	compact (courtyard)	orowa-type	mixed	elongated	compact (non-courtyard)
Habitable rms:Total no. of cells ratio	0.192	0.241	0.256	0.302	0.307	0.314

Geometric types	Type 1	Type 3	Type 4	Type 5	Type 2	Type 6
	double-loaded corridor	orowa-type	compact (courtyard)	elongated	compact (non-courtyard)	mixed
mean no. of bedrooms	1.776	2.2	2.417	2.933	2.971	3.25

Geometric types	Type 3	Type 1	Type 2	Type 4	Type 5	Type 6
	orowa-type	double-loaded corridor	compact (non-courtyard)	compact (courtyard)	elongated	mixed
%tage with a storeroom	22.00%	26.32%	54.88%	100.00%	86.67%	91.67%

Earliest -early 1900's to 1950s Early middle-1956-1964 late middle- early 1970s recent- mid 1970s to early 90s

6.1.1.1 *Geometric Types and Socio-economic variables*

There were strong correlations between geometric types and some socio-economic variables – household income, education levels, tenure patterns, and degree of control over the dwelling, but the strongest were with control and tenure [69], which are dependant on the household's economic ability.

Individual geometric types occur almost completely as self-contained or shared accommodation (see table 6-7 below), particularly in the case of the newer geometries. This suggests that the shift from multiple, related households living in the same dwelling, to self-contained single household living, coincided almost fully with the adoption of new geometries, with the double loaded corridor type acting almost like a bridge.

Table 6-7 Geometric types and control of the domestic space

control of domestic space	double-loaded corridor	orowa-type	compact (non-courtyard)	compact (courtyard)	elongated	mixed
self-contained single household units	6	1	**35**	**12**	**15**	**12**
multi-household units with shared facilities	**53**	**24**	0	0	0	0

[69] (see Cramer's V values in appendix C)

The newer types occur almost only as rented accommodation, and the orowa geometry mostly as owner-occupied, but the double-loaded corridor is less strongly defined in terms of tenure. This is not to say that the newer types are never used as owner-occupied units, but that those likely to build this types for owner-occupation are likely to be the well educated financially comfortable families, who have spent many years living in such types as tenants.

Table 6-8: Geometric types split by tenure

Tenure	orowa-type	double-loaded corridor	compact (non-courtyard)	compact (courtyard)	elongated	mixed
owner-occupied	18	19	0	0	1	0
rented	7	40	35	12	14	12
total	25	59	35	12	15	12

Earliest -early 1900's to 1950s | Early middle-1956-1964 | late middle- early 1970s-1980s | recent- mid 1970s to early 90s

Geometric types as mentioned earlier showed clear correlations to income and education. The orowa, and the double-loaded corridor types were more prevalent amongst poorer and less educated respondents/households, while most of the inhabitants of the compact (non-courtyard), elongated, and mixed types were wealthier and university educated respondents. A number of university-educated respondents also lived in tenements, but these tend to be younger, and at the beginning of their working life (see Table 6-9).

Table 6-9: geometric types and education level of respondents

Education levels of respondents	orowa-type	double-loaded corridor	compact (courtyard)	compact (non-courtyard)	elongated	mixed
with diploma or degree	4.00%	31.00%	25.00%	77.14%	73%	83.33%
with university degree	0.00%	12.00%	8.3%	42.85%	60%	67%

Earliest -early 1900's to 1950s | Early middle-1956-1964 | late middle- early 1970s-1980s | recent- mid 1970s to early 90s

6.1.1.2 Summary of Geometric types

Three shape geometries accounted for the six geometric types but, in some instances, the similarity in shape such as between the double-loaded corridor, and the elongated types was superficial as both geometries performed differently on the criteria. The double-loaded (predominantly temenent) type had more in common with the orowa type in terms of geometric criteria, whilst the two compact types were similar in performance, and the mixed type seemed to be a bridge between the compact and elongated types.

There is a strong relationship between geometry and dwelling types, control over the dwelling, and tenure, which is also predicated by economic factors. The orowa geometric type is almost totally restricted to Enuwa, as it is the traditional geometric type in Ile-Ife., while the compact (courtyard), compact (non-courtyard), elongated, and mixed types, are exlusive to more recently developed areas. The elongated and mixed types are mostly in the architect-designed campus sample which less driven by commercial gain, and dissimilar to the traditional type on most criteria. The compact non-courtyard version is mostly in the estates, usually commissioned by private landlords, designed by draftsmen, and aimed at professionals in the university/civil service/health sector as a commercial venture, or by the public housing corporation for a clerical and semi-skilled workforce. The double-loaded corridor type is strongly identified with Akarabata.

The compact (non-courtyard), elongated, and the mixed geometric types are rented accommodation, and popular in the educated, higher income groups, the orowa-type is mainly owner-occupied (inherited), by lower income households, and the compact (courtyard) type were mostly rented by average and low income households.

The new labels [the storeroom (and the dining room)] are absent in the old types, and these activities/functions were performed in the orowa, or in one of the bedroom in the

orowa house. Geometrical variations in the types were evident on all four criteria, but most marked in terms of a) degree of separation between living and sleeping sectors, and b) increased T:F ratios, from the older to the newer examples, and generally from shared to self-contained accommodation. This lends support to the view that the two criteria constitute important lifestyle markers, that is the need to spatially distinguish living and sleeping, and also the need to have sole control over all, or most aspects of domestic life. There was more geometric variety in the new areas, the campus being the most diffused in proportion of geometric types, although the oldest area (Enuwa) is slightly more varied than Akarabata. The estates, which had five types is actually dominated by the compact type, for economic reasons (27no. cases see Table 6-1, p145).

There was only a weak correlation between satisfaction with the dwelling and geometry, with the highest levels of satisfaction recorded in the elongated and mixed, and the least level in the compact models. This lack of correlation with satisfaction, and the strong socio-economic identity of geometric types, also suggests that a type prevalent in one socio-economic group may be less suited for another group, as they are clearly being assessed by different requirements.

6.1.2 Inequality Genotypes

Similarly to geometric typing, the syntactic analysis covered in this section includes a discussion of the relationship between identified genotypes and spatial, and socio-economic variables. In order to identify the genotypes that underlie the variety of floor plans, the integration values of the orowa (where applicable), living room, kitchen, corridor, and bedroom, in all floor plans were ranked in order, and those sharing a similar sequence of spaces were identified as belonging to the same genotype.

As defined in chapter four, the integration value measures how well connected each space label is to other spaces in the dwelling, and allows a comparison of each space label's degree of connectivity in relation to other cells in the domestic space. As such, spaces are either integrated (well connected in comparison to other spaces in the plan), or segregated (not well connected). Six genotypes accounted for over 90% of the sample (see pg 165), but some were restricted to one area, whilst others are more widespread.

The mean depth for the key space labels was calculated in each genotype. This is based on the step depth of each space label, that is, the number of intervening spaces between each space label and the outside world. The relative position of key space labels in terms of their mean depth was compared across genotypes, to assess whether major shifts in depth positioning have occured over time. Key space labels were also compared accross genotypes to note any changes in the nature of the spaces: - whether it is a dead-end space (A-space), in a sequence of linked spaces in the dwelling (B-space), or on one rin (C-space) or more than on ring (D-spaces), as defined in chapter four.

Two main patterns were found: - A) floor plans integrated by function spaces (the orowa or living room)- A1)the Orowa genotype, and A2) the Living-room genotype,- and B) floor plans integrated by a transition space (the corridor), of which there are four types.

The transition genotypes are as follows: - double loaded corridor genotypes with a segregated kitchen (B1), segregated function spaces (B2), and a more integrated kitchen (B3), and a single loaded corridor genotype with a more integrated kitchen (B4). The genotypes are described next, with the function integrated ones presented first.

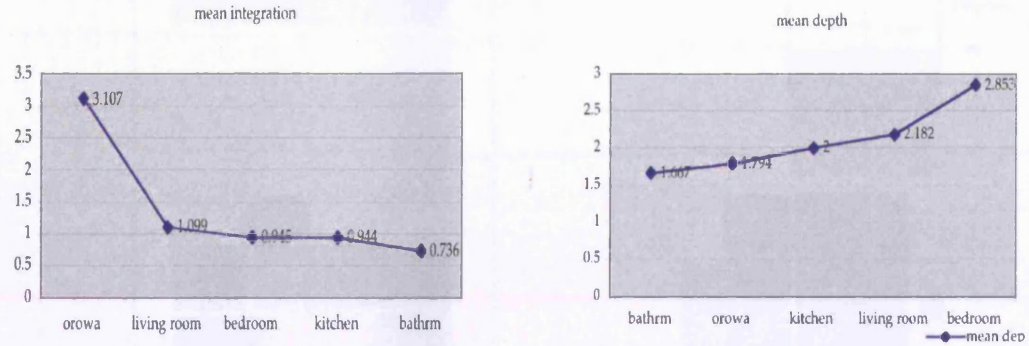
Table 6-10: Distribution of genotypes in the four areas

	Estates	Campus	Akarabata	Enuwa	
Distribution of genotypes in the 4 areas	(1970's to 1990's)	(1964-1974)	(1954-1962)	(from 1890's)	total
Orowa genotype - A1			1	16	17
Living room genotype - A2	10	4			14
DL-Corridor genotype (Kit-seg) B1	7	8	24	13	52
DL-Corridor genotype (function spaces seg) B2			5	6	11
DL-Corridor genotype (kit-more int) B3	4	1	7	3	15
SL-Corridor genotype (Kit-more int) B4	16	22	1	1	40
totals	37	35	38	39	149

A) Function-Integrated Genotypes

A1) Seventeen examples of **Orowa genotype** were found in the sample (in Enuwa). The orowa space was the most integrated space of the five key space labels, and the genotype accounts for the bulk of the orowa traditional houses sampled (17 of 24). The typical layout is a central orowa with surrounding rooms, usually with the shower and toilet in separate sheds were they occur. Because the seventeen examples of this genotype had an orowa and only twelve had corridors/lobbies, the genotype was assessed based on the orowa as the principal connective space label, and on the availability of either a shower or toilet as not all households had both. The living room, sometimes has the same integration value as the bedroom, or was slightly less segregated, whilst the kitchen and the shower/toilet were the most segregated spaces. The shower was the shallowest from the outside world, since it is almost always connected directly to the outside, and

the orowa is the shallowest interior space (see fig 6-8, p165). The orowa genotype has the lowest mean step depth (3.588) in the sample, and the exterior is quite integrated (mean integration-1.240), in contrast to some of the transition genotypes.



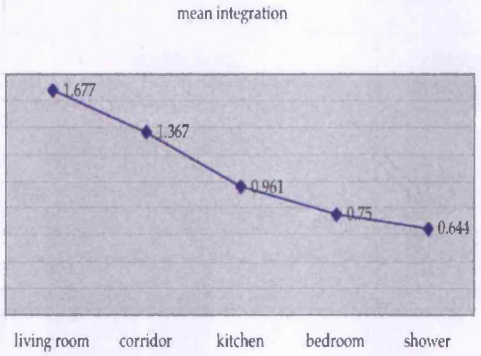
Space Label	Orowa	>	Living room	>	Kitchen	>	bedroom	>	bathroom
Mean integration	3.107		1.099		.945		.944		.736

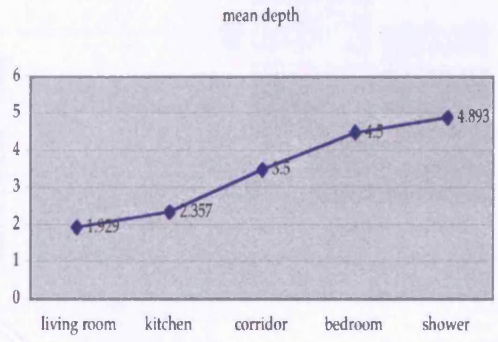
Figure 6-8: Mean integration and mean step depth for orowa genotype

None of the seventeen plans were exact though some looked similar, and thirteen were ringy structures. That is, they had some space labels arranged such that the inhabitant can start from a given space, and move through a sequence of spaces, to return to the starting space label, but this often involved using an external door to keep continuity of the sequence (mean number of rings = 1.0). A high proportion of all the space labels in orowa genotype were dead-end A-spaces (56.7%) with 14.4%, of B-spaces, 20.6% of C-spaces and 8.2% of D-spaces. The orowa spaces were usually a C or D-space (11 of the 17 were of these types), and none occured in A-spaces, which is logical as it is the main connective space in these plans. The living rooms were evenly split into five A, and B-spaces and four C, and D-spaces, but kitchens were mostly A, or B-spaces (5nos) with two C-spaces, and the bedrooms were almost all A-spaces. In summary, the orowa was mostly on a ring, the living room was either on a ring or off it, while the kitchen and bedroom were predominantly dead-end spaces.

Figure 6-9: Examples of orowa genotype

A2) The Living-room genotype: - There were fourteen houses of this type, and they were generally occupied by higher income households and consisted of self-contained units mainly in the estates. Its main distinguishing features is that the most integrated space is a function space (living room) instead of a transition space similarly to the orowa genotype. The living room is the most integrated followed by the corridor, the kitchen, the bedroom and the bathroom, and the orowa is completely absent. There is almost a complete reversal in depth patterns- see graphs below, but with a mean step depth of 5.429 from the exterior, the living-room genotype is the deepest of the main genotypes. The exterior is very segregated (mean integration = .800), in marked difference to the orowa genotype, and is most segregated of the six main genotypes.





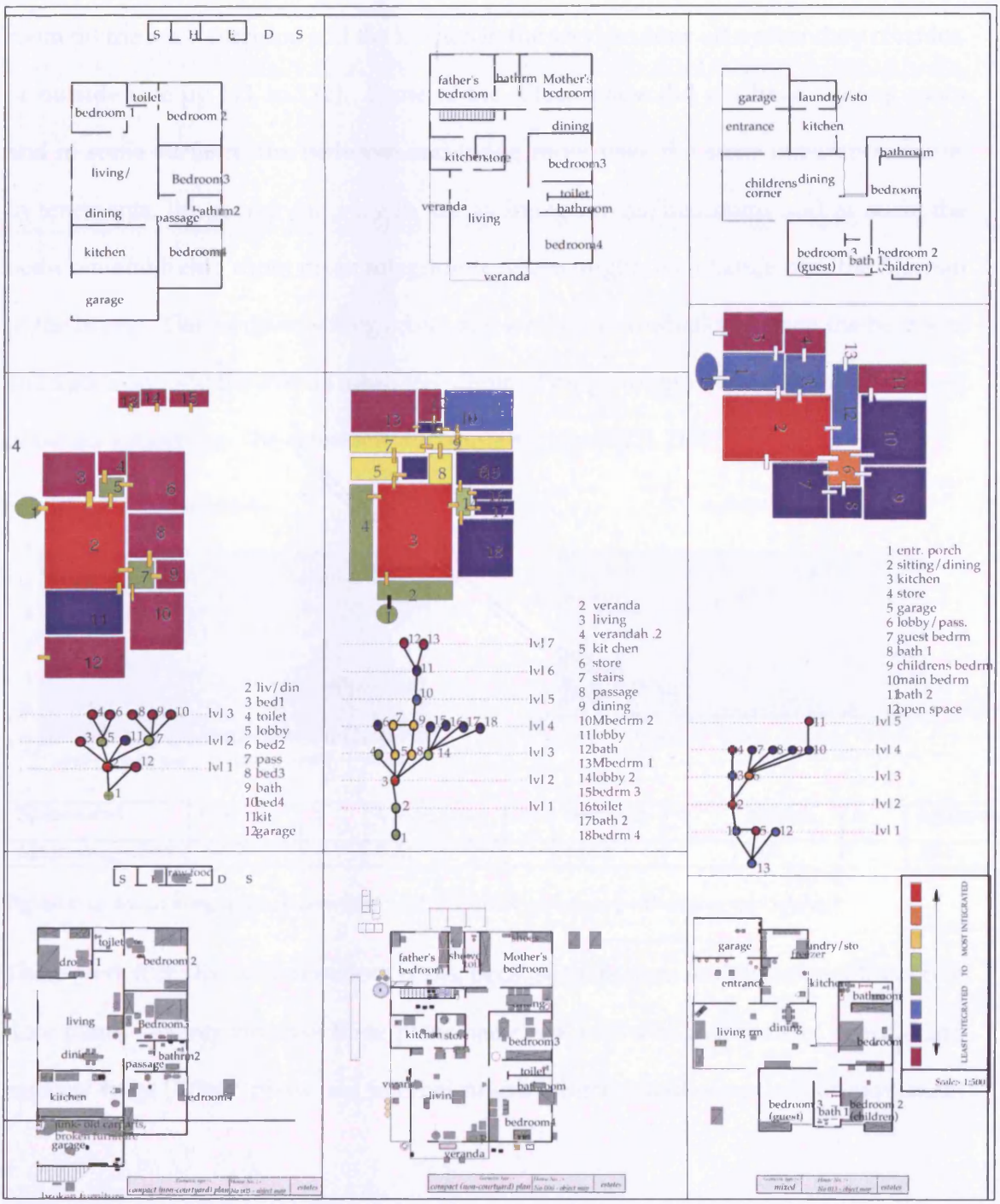
Space Label	Living room	>	Corridor	>	Kitchen	>	Bedroom	>	Shower room
Mean Integration	1.677		1.367		.961		.75		.644

Figure 6-10: Mean integration and mean step depth for the living-room genotype

Of the fourteen examples of the genotype, there were twelve different floor plans, (one duplicate), eight of which had (external) rings, but its mean number of rings is the lowest of the main genotypes at 0.571. It has 60% of dead-end A-spaces, some B-spaces (21.2%) and 18.8% C-spaces but no D-spaces. The living rooms and kitchen were both a mixture

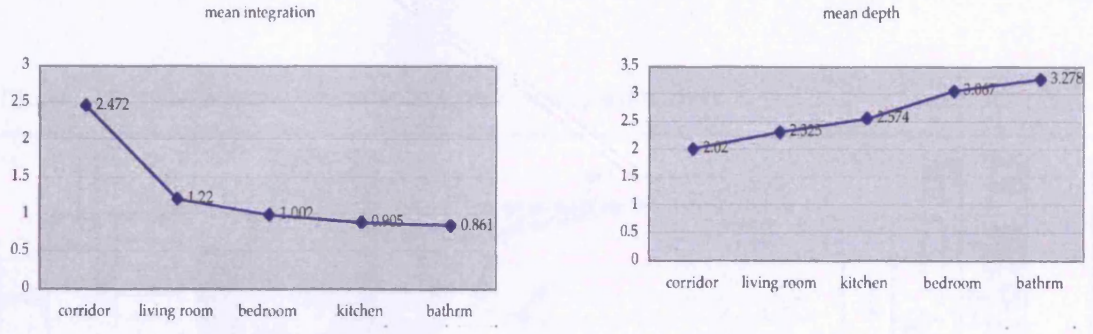
of B and C-spaces, while the bedrooms were a mixture of A and B-spaces, although in six of the plans, the bedrooms were a combination of A and B-space types. All the three space labels seemed to lack a strong space-type identity, which is at odds to the conditions found in the other five genotypes. (see Examples below in Figure 6-11).

Figure 6-11: Examples of living-room genotype



B) Transition-Integrated genotypes

B1) The double loaded (DL)-corridor genotype (with segregated kitchen) was the most common in the sample with fifty-two plans, typified by a strongly integrated corridor, followed by the living room, bedroom, kitchen, and the toilet/bathroom respectively. This is because twenty-four of this type are tenements, with the bedroom and living room off the main corridor, and the kitchen in the services zone off a secondary corridor, or outside (see pg 171 to 172). Some of the fifteen plans did not have a living room and in some variants, the bedroom and living room have the same integration value. In tenements, the rooms can vary in use as living rooms/bedrooms and as such, the bedroom and living room mean integration values might interchange over the lifespan of the house. The corridor, sitting room, and kitchen were shallower than the bedroom and bathroom, and the overall mean step depth of the genotype was 4.308, the 4th deepest of the six genotypes. The exterior is also quite segregated (1.219).



Space Label	Corridor	>	Living room	>	Bedroom	>	Kitchen	>	bathroom
Mean integration	2.472		1.22		1.002		.905		.861

Figure 6-12: Mean integration of core labels-(DL)-corridor genotype (with segregated kitchen)

There were forty-five different floor plans, because there were multiple examples of two floor plans. Twenty-seven of these plans had rings, and with a mixture of internal and external rings (fifteen plans had internal rings), which describes options of movement

within/around the dwelling, thereby making a domestic complex relatively shallow in comparison to the other genotypes. Its mean number of rings is 2.467, which is the highest of the six genotypes. Many of the houses had a predominance of dead-end A-spaces, reflected in the overall pattern for genotype A- 55% A-spaces, 12% B-spaces, 27.4% C-spaces and just 5% of D-spaces. Twenty-four of the forty-two living rooms were C-spaces (in twenty-one different floor plans), with just three in D-spaces. The other fifteen living rooms occurred (in fifteen different plans) as either A (11nos) or B (4nos) spaces. The kitchens were mainly C-spaces- (21 nos) C-spaces, (12 nos) A-spaces, and (3 nos) B-spaces. The bedrooms were perdominantly A-spaces (with forty-five A-spaces in forty-one plan layouts), twelve C-spaces in nine plan layouts, and three B-spaces. In addition, there were nine households with bedrooms that were a combination of space types (in seven floor plan layouts). Overall, the living rooms, and kitchens had a mixture of C and A/B-spaces, and the kitchens were usually directly linked to the exterior. Bedrooms were mainly A-spaces but a significant number of C-spaces also occurred.

Figure 6-13: Example of (DL)-corridor type (with segregated kitchen)

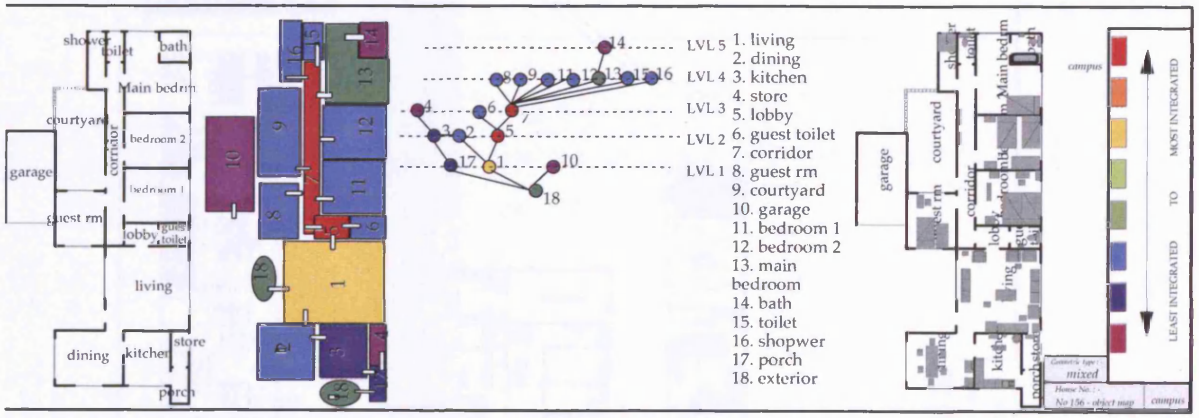
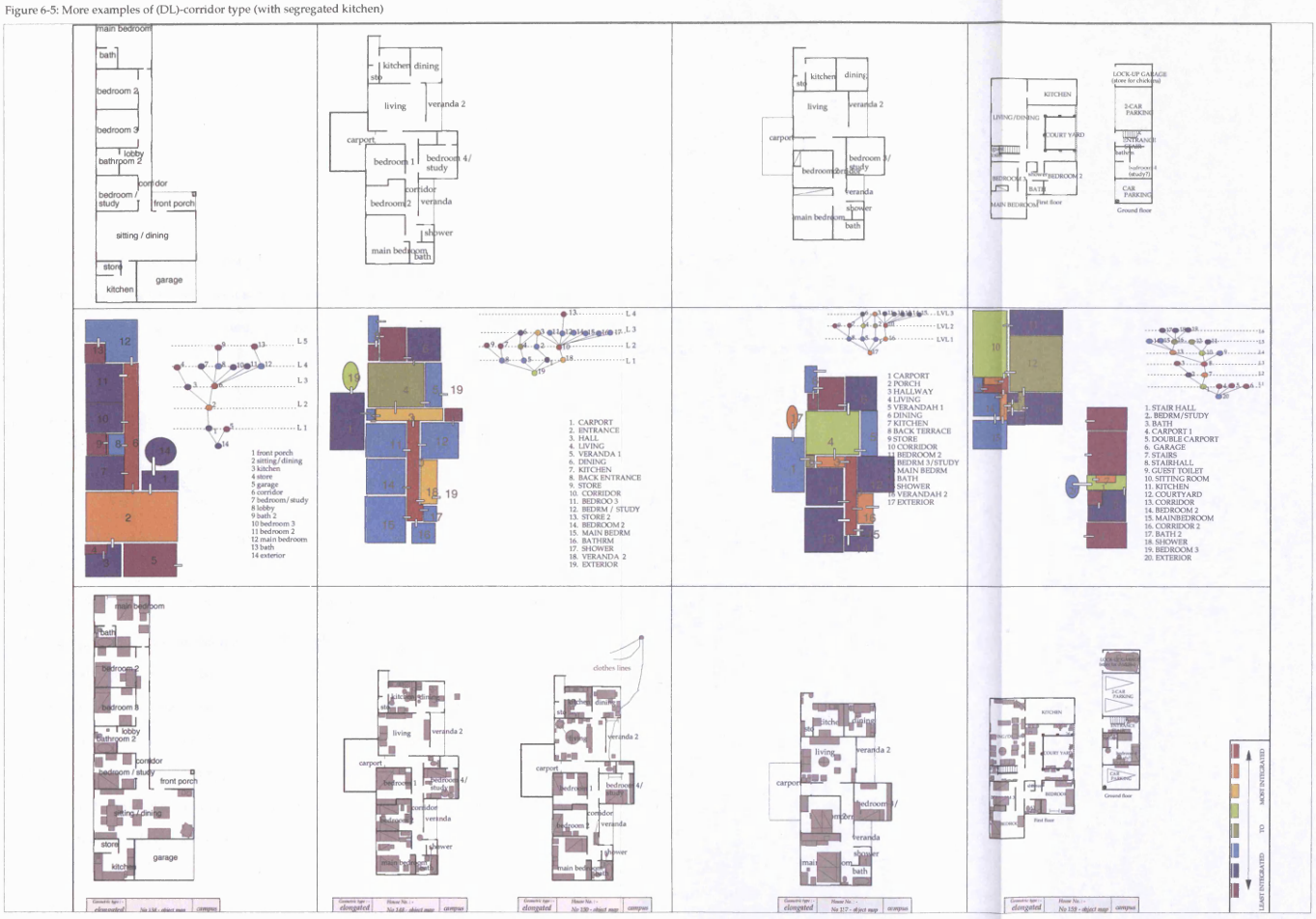
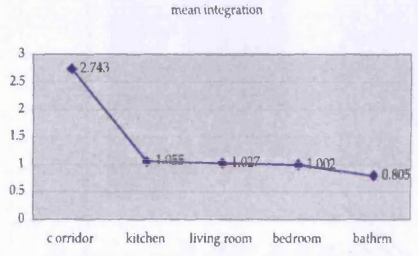
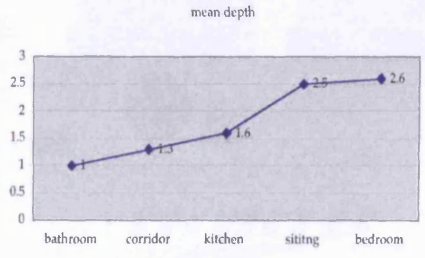


Figure 6-5: More examples of (DL)-corridor type (with segregated kitchen)



B2) The double loaded (DL)-corridor genotype, with all function spaces segregated is different from the transition genotype discussed previously in that there is very little differentiation between the integration values of key function labels, a variation found in tenement housing. Its distinguishing features are a highly integrated corridor, the living room, bedroom, kitchen and the toilet have the same integration value in some phenotypes, and an integrated exterior (mean integration= 1.902). The toilet and/or shower is absent in four of the eight phenotypes. Its depth pattern is also different, with the bathroom being the shallowest space because they are in outhouses, and the living room and bedroom are deepest, though the genotype is the shallowest (mean step depth of 3.2).



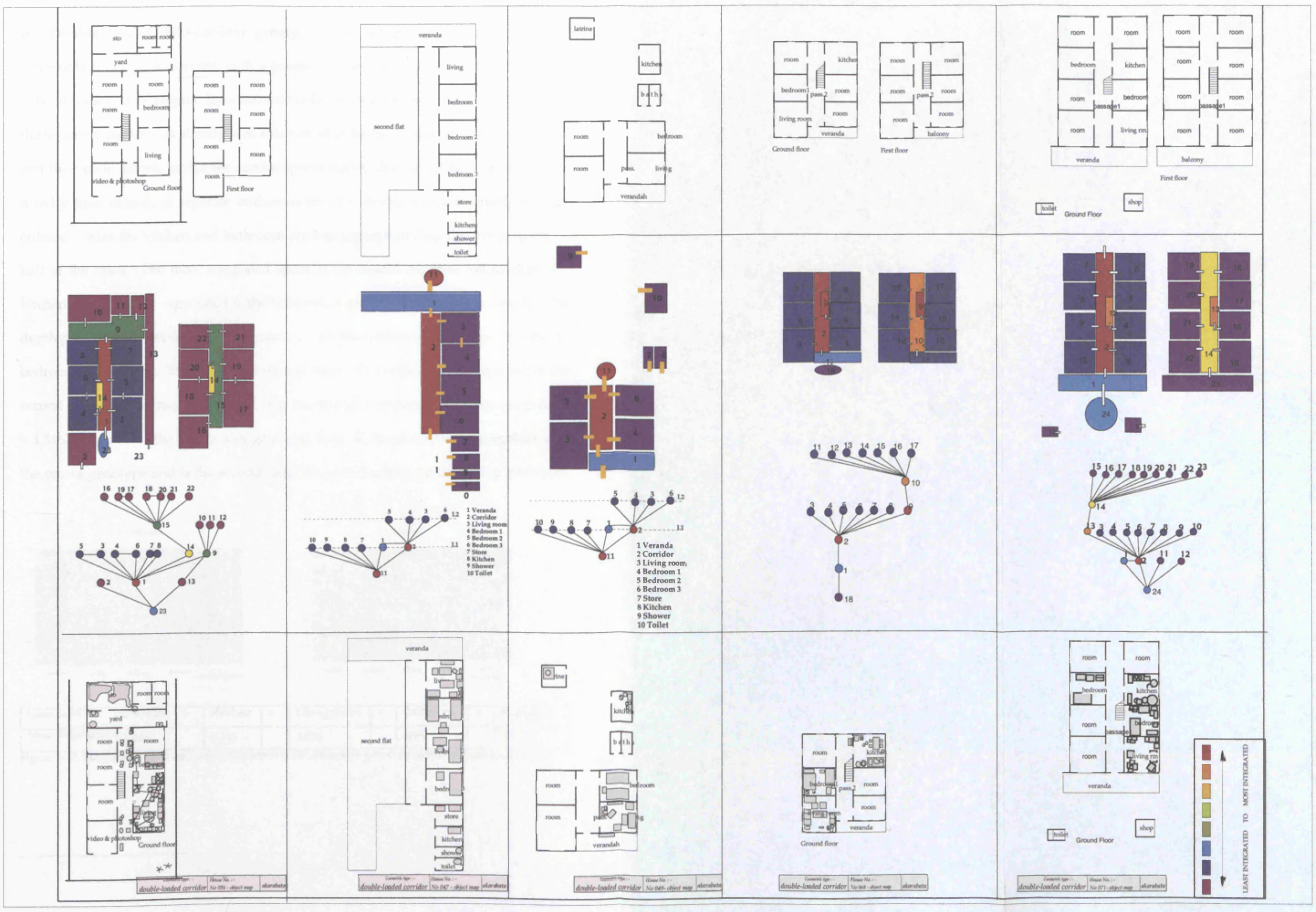


Space Label	Corridor	>	Kitchen	>	Living rm	>	bedroom	>	bathroom
Mean integration	2.743		1.005		1.027		1.002		.805

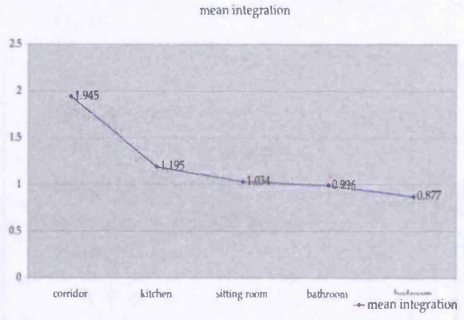
Figure 6-15: Mean integration and mean step depth of (DL)-corridor genotype (all function spaces seg)

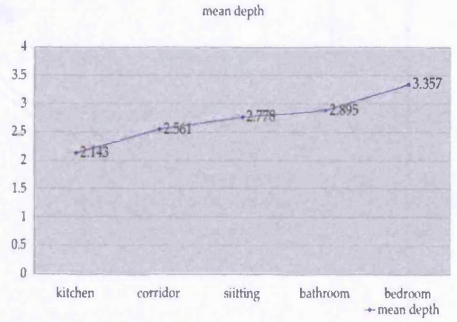
All the eight plans are different and five of the plans are ringy with twelve external and six internal rings (mean number of rings= 1.571), but it is one of the least ringy genotype. The proportion of A-spaces is the highest of the six genotypes at 67.2%, but with 2.2% D-spaces which is the lowest of the genotypes. 7.3% B-spaces, 23.4% C-spaces and 2.2% D-spaces occurred in this genotype. Despite the number of plans with rings, most living rooms, and bedrooms were A-spaces- (the kitchens were all A-spaces) and only a couple of living rooms and bedrooms were C-spaces.

Figure 6-16: Examples of (DL)-corridor genotype (all function spaces segregated)



B3) Double loaded (DL)-corridor genotype (with integrated kitchen) was more commonly found in Akarabata, with a couple of examples in Enuwa and estates, and only one case in the Campus. Its occurrence in Enuwa was in newer dwellings built after the tenement model was already well established in Ile-Ife. There are fifteen examples, and their main feature is that the service spaces (toilet, shower, kitchen) are accessible directly from outside in separate outhouses or off a service staircase directly leading outside. Also the kitchen and bathroom are less segregated than the living room, in half of the cases. The most integrated space is the central corridor, followed by the kitchen, and the most segregated is the bedroom, a rare occurrence in the sample. The depth pattern is almost similar to integration, with the kitchen being shallowest and the bedroom, the deepest. The mean overall step depth of the type is 4.867 steps and is the second deepest of the main genotypes. The exterior is well integrated (mean integration = 1.516), similarly to the DL-corridor genotype, (with all function spaces segregated), and the orowa genotype and is the second most integrated cell in the inequality genotype.



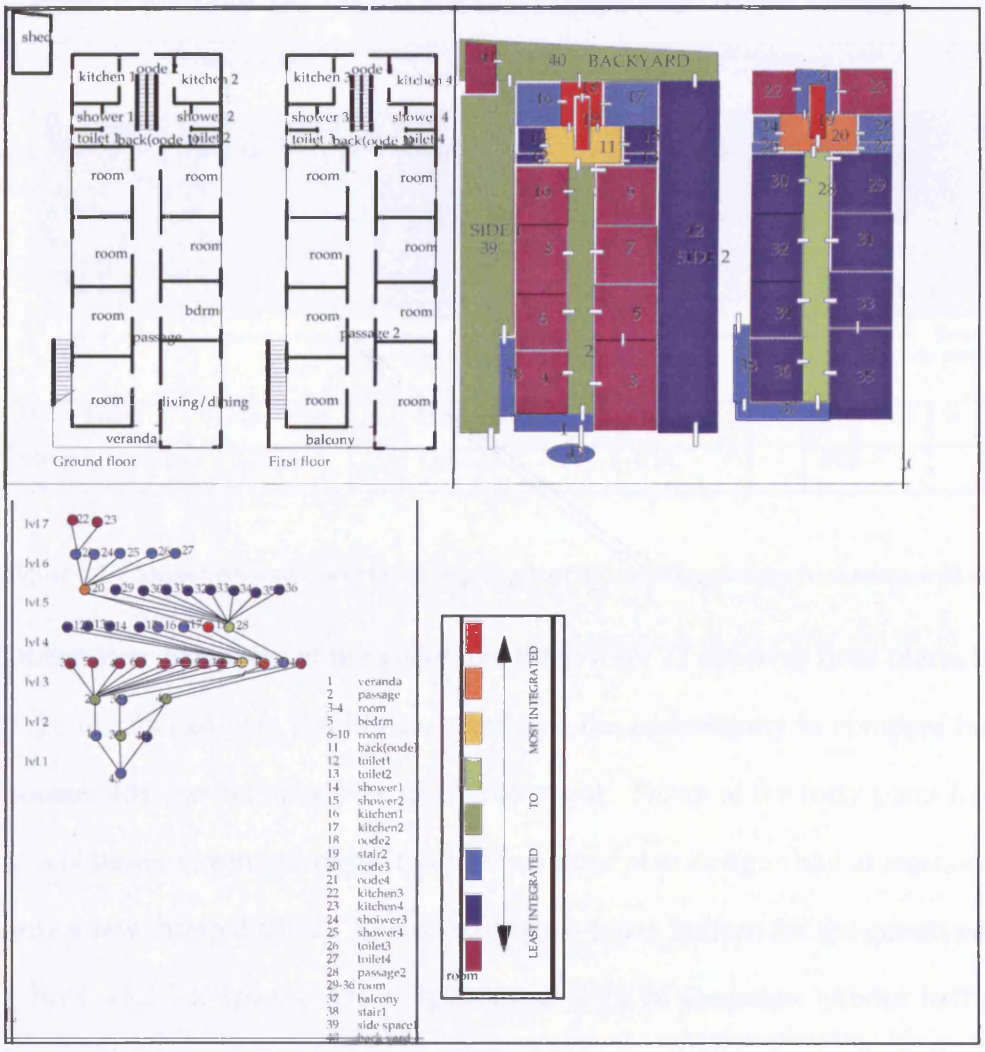


Space Label	Corridor	>	Kitchen	>	Living room	>	Bathroom	>	Bedroom
Mean Integration	1.945		1.195		1.034		.996		.877

Figure 6-17: Mean integration and mean step depth of (DL)-corridor genotype (with integrated kitchen)

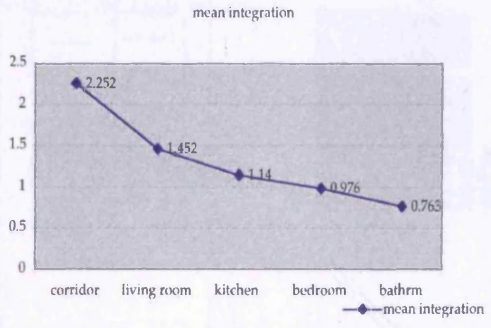
Almost all fifteen examples are visually similar, and it is the second most ringy genotype (mean number of rings= 2.357), with a fair number of minor internal rings that simply connect two rooms to provide the option of use as a suite, but are often not used as such. The split in the nature of the space-types is similar to the double loaded-corridor genotype (with all function spaces segregated) : - 62% A-spaces, 12.8% B-spaces, 19.5% C-spaces and 5.8% D-spaces. The living rooms were a mixture of A and C-spaces, while the kitchens and the bedrooms are predominantly dead-end A-spaces. (see Figure 6-18)[70].

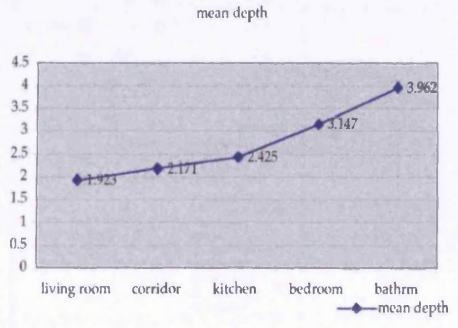
Figure 6-18: An example of (DL)-corridor genotype (with integrated kitchen)



[70] Other examples of this genotype can be found in appendix C

B4) The single loaded (SL)-corridor genotype (with integrated kitchen) is the second most common genotype in the sample for which forty examples were found, mainly in the newer areas- campus and estates, and all except one, were self-contained units either on one or two floors. The most integrated spaces in the genotype are the corridor and living room, and the most segregated are the toilet and bath (see examples on p178 to p179), with the kitchen and bedroom in-between. The most integrated spaces are also the shallowest, while the kitchen, bedroom and bathroom are deeper. The overall mean step depth of the genotype was 4.4, the 3rd deepest of the six genotypes and the exterior (mean integration = 1.048) is quite segregated, but less so than the bedroom and bathroom.





Space Label	Corridor	>	Living room	>	Kitchen	>	bedroom	>	bathroom
Mean integration	2.252		1.452		1.14		.976		.763

Figure 6-19: Mean integration and mean step depth of (SL)-corridor genotype (with integrated kitchen)

Of the forty examples of the genotype, there were 22 different floor plans, because of a large number of plan duplicates, providing the opportunity to compare how different households use the same plan in chapter eight. Thirty of the forty plans had rings, but in real terms, seventeen of the twenty-two floor plan designs had at least one ring, with only a few internal rings. The overall space-types pattern for the genotype is 49.2%A-spaces, 15.2% B-spaces, 30% C-spaces and 5.6% of D-spaces. About half of the forty living rooms were C-spaces, occurring in thirteen different floor plans; and the others

were either A or B spaces. About 70% of the kitchens were C-spaces- usually on the same chain as the living room, in thirteen different plan layouts, with thirteen kitchens being either an A or B space occurring in nine different plan layouts. The bedrooms in contrast were all A-spaces bar one instance, and this bedroom was actually a converted living room. In general, the living rooms were split between C and A/B-spaces, the kitchens occurred mostly as C-spaces, often with a direct external link, while the bedrooms and bathrooms were almost always terminal, A-spaces.

Figure 6-20: Examples of (SL)-corridor genotype (with integrated kitchen)

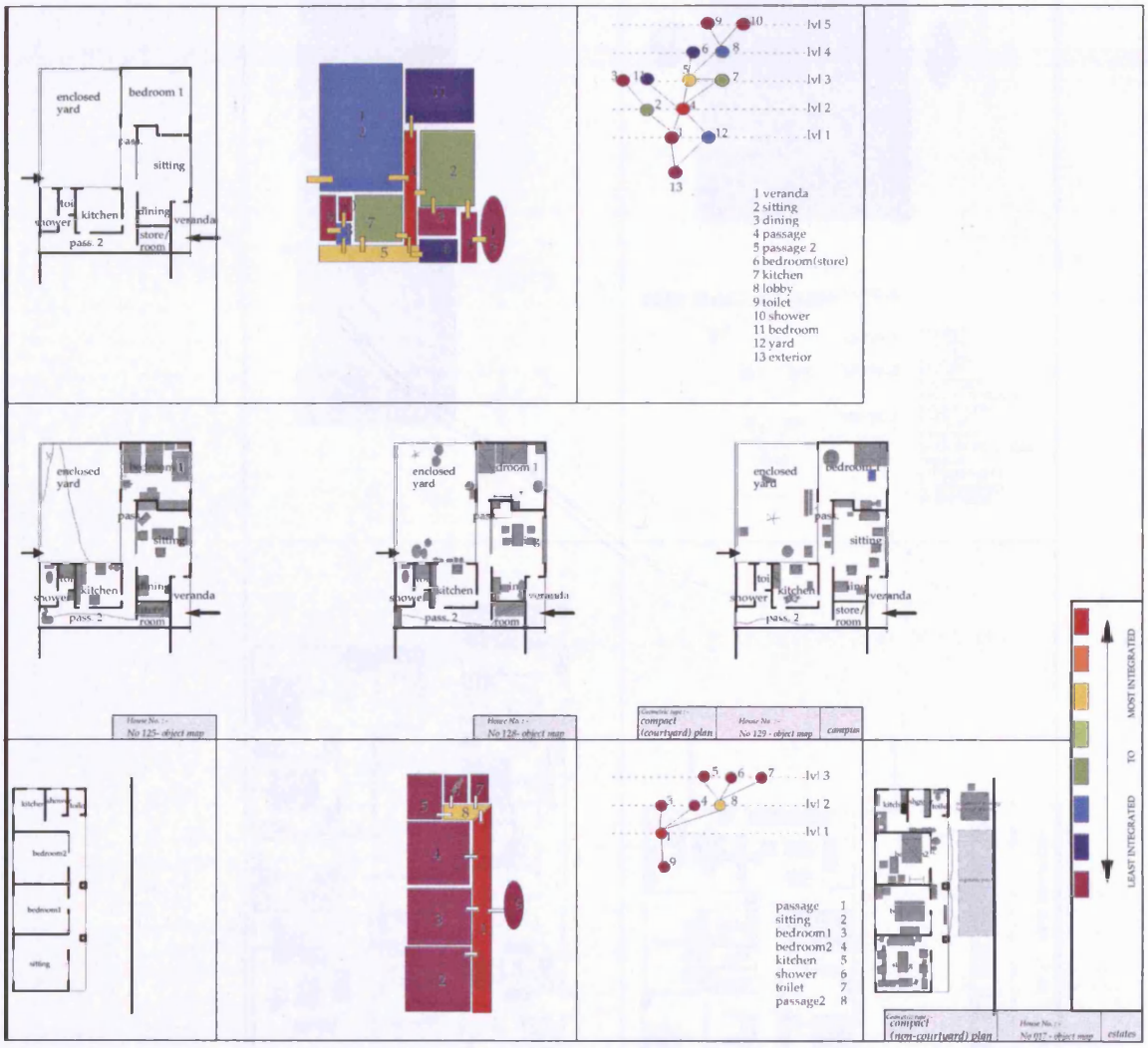
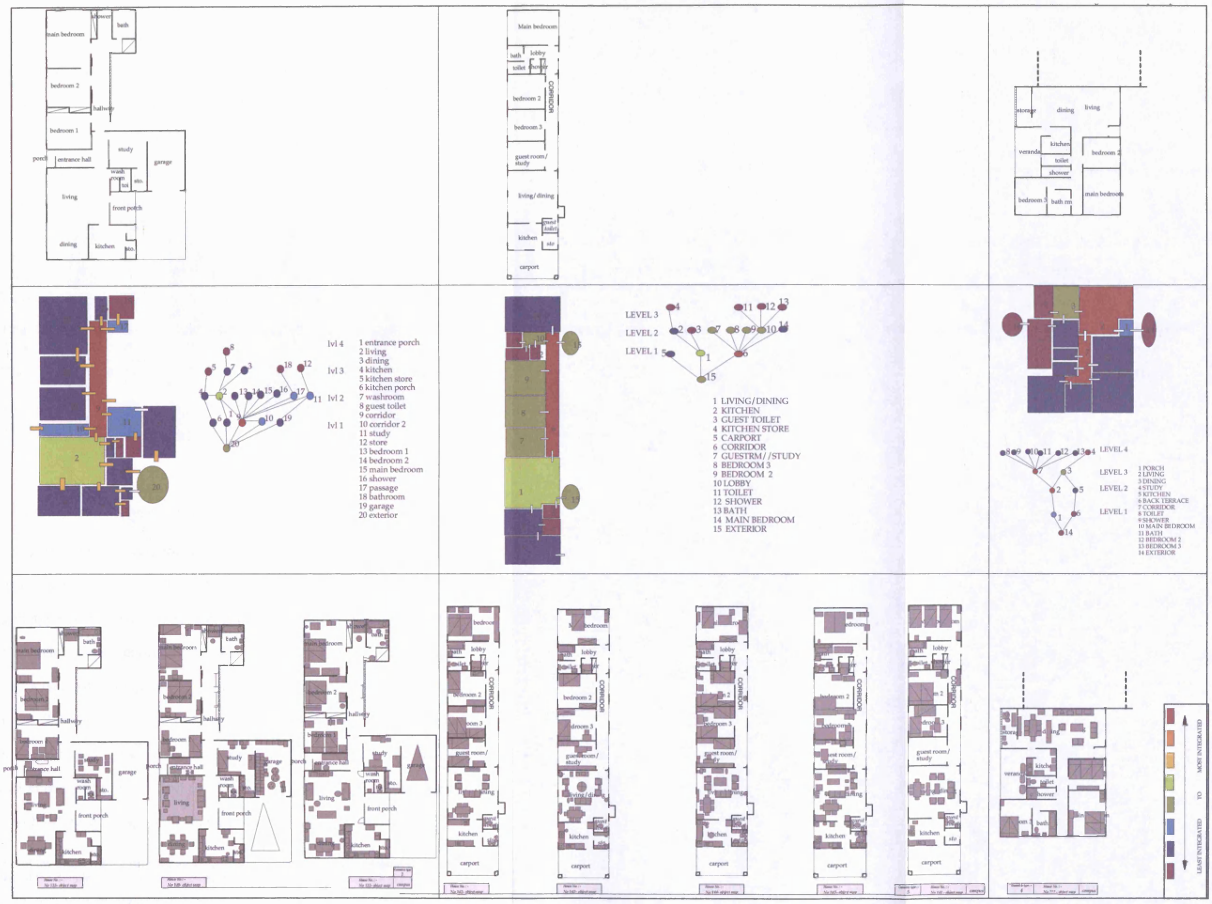


Figure 6-21: More examples of (SL)-corridor genotype (with integrated kitchen)



6.1.1.1 Other Phenotypes and Genotypes

Eleven floor plans of an idiosyncratic character are outlined below, and what they have in common is that the kitchen is more integrated than the corridor (in type D and J2), and the bedroom is very segregated (type J, and J2). Eight of these plans were in the campus and estate samples. Four other floor plans were excluded due to incomplete drawings.

Table 6-11: Summary of other genotypes in the sample

Genotype D *4 floor plans*	*Living room*		*Corridor*		bedroom		toilet		*kitchen*
Mean integration	2.318	>	1.763	>	.966	>	0.910	>	0 .858
Mean step depth	2.318		3.375		4.25		4.333		2.250

Genotype J *2 floor plans*	*Orowa*		*Sitting room*		kitchen		Bathroom		*bedroom*
Mean integration	1.558	>	0.905	>	0.847	>	0 672	>	0 .595
Mean step depth	2.5000		2.000		2.000		1.000		4.750

Genotype J2 -K *2 floor plans*	*Living room*		*Kitchen*		Corridor		Bathroom		*Bedroom*
Mean integration	1.308	>	1.121	>	0.942	>	0.619	=	0 .619
Mean step depth	4.000		3.000		5.000		6.000		6.000

6.1.1.2 *Summary of six main Genotype distribution.*

The (DL)-corridor (seg. function spaces) genotype [This abbreviated form of the double-loaded corridor genotype (with all function spaces segregated), is used hereafter], and the Orowa genotype were restricted to the older areas, while the (SL)-corridor genotype[71], and the Living-room genotypes are almost restricted to the newer areas. Only the (DL)-corridor (seg. kitchen) genotype[72], and to a lesser extent, the (DL)-corridor (int. kitchen) genotype[73], bridge the older and newer areas, but there is a decrease in the (DL)-corridor (seg. kitchen) genotype, from the old to the new areas. The (DL)-corridor (seg. function spaces)genotype, and the Orowa genotype are absent from the newer areas as a result of lifestyle requirements for self-contained and more functional

[71] This abbreviated form of the single-loaded corridor genotype (with integrated kitchen), is used hereafter
[72] This abbreviated form of the double-loaded corridor genotype (with segregrated kitchen), is used hereafter
[73] This abbreviated form of the double-loaded corridor genotype (with integrated kitchen), is used hereafter

specialisation of space labels, which is addressed by the appearance of the Living-room, and the (SL)-corridor genotypes, and the appearance of new function labels. The (DL)-corridor (seg. kitchen), and the (SL)-corridor genotypes account for over half of the total house plans surveyed. The (SL)-corridor type seems quite popular, and may overtake the (DL)-corridor (seg. kitchen) genotype amongst higher socio-economic groups. The newer areas yielded slightly fewer genotypes (four each) compared to five each in Akarabata and Enuwa, although all the areas have a couple of dominant genotypes.

6.1.2 Geometric types and Genotypes; a comparison

The main genotypes and geometric types show strong correlations, evidenced in a Cramers 'V' value of .538, and contingency coefficient of .769. The Living-room genotype, the (SL)-corridor genotype, and the (DL)-corridor (seg. kitchen) genotype are geometrically varied, while the (DL)-corridor (int. kitchen), the (DL)-corridor (seg. function spaces), and the Orowa genotypes are restricted. Only the double-loaded corridor, compact (non-courtyard), orowa-type, and elongated geometric types are all strongly identified with one or two genotypes.

Table 6-12: Genotypes and geometric types

Genotypes	Orowa genotype	(DL)-corridor type 2	(DL)-corridor type 3	Living-room genotype	(SL)-corridor type 4	(DL)-corridor type 1
Geometric types		(All function spaces segregated)	(kitchen integrated)		(kitchen integrated)	(kitchen segregated)
elongated				1 (7.1%)	8 (20.0%)	5 (9.6%)
compact (courtyard)					11 (27.5%)	
compact (non-courtyard)				**9 (64.3%)**	**15 (37.5%)**	7 (13.5%)
mixed			3 (20%)	4 (28.6%)	3 (7.5%)	2 (3.8%)
double-loaded corridor		**10(90.9%)**	**11 (73.3%)**		3 (7.5%)	**33 (63.5%)**
orowa-type	**17 (100%)**	1 (9.1%)	1 (6.7%)			5 (9.6%)

Old-type	Newer type	intermediate period	Enduring type

The few cases of the (DL)-corridor (seg. function spaces) genotype, are almost entirely of the double-loaded corridor geometric type; with its characteristic shared services and low performance on geometric criteria. The genotype has a strongly integrated corridor (in place of the orowa), and is often used as an activity space. The genotype seems to have been adopted in Enuwa after the appearance of tenements in Akarabata.

The Orowa genotype is exclusively of the orowa geometric type (17 cases, 100%) although the orowa geometric type is not exclusive to this genotype. The orowa geometric type is quite compact, and as explained earlier, it is the traditional type with the well integrated central wide hall (orowa), but it performed poorly in terms of the geometric criteria.

These two genotypes are restricted in geometry and in location, and both are characterised by the living core being the most integrated, with segregated sleeping and service areas.

The Living-room genotype and the (SL)-corridor genotype show more geometric variability with three and five geometric types each respectively, but the (SL)-corridor genotype is more diffused. The compact (non-courtyard) is the most common geometry in both genotypes, characterised by relatively strong performance on the geometric criteria apart from threshold elaboration. The kitchen is better integrated than the sleeping areas in both genotypes, despite the fact that one is function integrated and the other is transition integrated. The genotypes are mostly restricted to the newer areas, and are almost all self-contained units.

The (DL)-corridor (seg. kitchen) genotype is mostly comprised of the double-loaded geometry (33 cases, 64%), but it is also a geometrically varied genotype, which possibly makes it attractive across socio-economic groups. While it is certainly more common in the tenements of the lower income neighbourhood of Akarabata, it is also expressed

in the geometries found in the newer, wealthier, campus and estates, though in lesser proportions. Consequently, its performance on the geometric criteria ranges from a lack of separation of the sectors, little elaboration of thresholds, to conditions of separated sectors, elaborate thresholds, and separation of inhabitant and visitor circulation. Perhaps whilst having more bedrooms, new function spaces (study rooms, garages etc), and self-contained plans for increased household privacy are quite important issues, (as reflected in some of the geometries found in this genotype), there is a deeper need to maintain the configuration hierarchy expressed in the genotype across board.

The (DL)-corridor (int. kitchen) genotype is geometrically strongly defined by the double-loaded corridor geometry (11 cases, 73%), with a few examples of the mixed, and the orowa geometric types. Although all three geometries share socio-spatial similarities (in relation to income, tenure, and restriction to the older areas), this inequality genotype is different. Its service core is less segregated than occurs in the other two (DL)-corridor genotypes, and the bedroom is the most segregated space of these types. Perhaps its low occurrence in the whole sample suggests that it is not well suited to domestic lifestyle in Yoruba culture.

6.1.3 Genotypes and Syntactic variables

Associated with the relation between genotypes and geometry outlined above, the general trend is a decrease in mean integration from the older, to the new genotypes, with the enduring genotype [(DL)-corridor (seg. kitchen)] being also less integrated. The mean (step) depth pattern follows an opposing trend: - the older genotypes [the (DL)-corridor genotype (seg. function spaces), and the Orowa genotype)] are shallowest, and the newer genotypes [the (SL)-corridor, and Living-room genotypes] are deepest, with

the intermediate and enduring genotypes in-between. This pattern is also reflected in the base difference factor, which measures the extent to which the integration values of all spaces in a given plan/genotype are deferentiated. The Orowa genotype, is the most differentiated (bdf* = 0.582), but the two new types are split- with the Living-room genotype the least differentiated (bdf* = 0.764), and the (SL)-corridor genotype being quite differentiated (bdf* = 0.665).

Table 6-13: Genotypes and syntactic summary

genotypes	mean overall depth
DL-corridor type (all seg. function spaces)	3.2
Orowa	3.588
DL-corridor type (seg. kitchen)	4.308
SL-corridor type	4.4
DL-corridor type (int. kitchen)	4.867
Living-room type	5.429

from shallowest to deepest genotype

genotypes	mean integration
Orowa type	1.228
DL-corridor type (int. kitchen)	1.212
DL-corridor type (all seg. function spaces)	1.189
SL-corridor type	1.123
DL-corridor type (seg. kitchen)	1.069
Living-room type	0.92

from more integration to less integrated

genotypes	base diff. Factor
Orowa	0.582
SL-corridor type	0.665
DL-corridor type (seg. kitchen)	0.683
DL-corridor type (int. kitchen)	0.69
DL-corridor type (all seg. function spaces)	0.693
Living-room type	0.764

from most to least differentiated

old genotype | new genotype | intermediate genotype | enduring genotype

The most integrated space in the genotypes is either a function, or transition space, but in a few cases, there is a mixed situation. While the Orowa genotype is strongly dominated by function spaces as the most integrated cell, all other genotypes apart from the newer Living-room genotype, have a transition space (corridor) as the most integrated space (see Table 6-14, p185). The general pattern is a swing from function integrators to transition integrators from older to newer genotypes though, function dominated plans are the majority in one of the newer genotypes (Living-room genotype).

Table 6-14: Genotypes and integration dominance

Integration dominance	Orowa type	DL-corridor type (all seg. function spaces)	DL-corridor type (int. kitchen)	Living-room type	SL-corridor type	DL-corridor type (seg. kitchen)
function space	15	1	2	9	1	7
transition space	2	9	12	5	39	45

Old type | intermediate | New type | Enduring type

In terms of the ringiness of the genotypes, the enduring genotype- DL-corridor (seg. kitchen)- is the most ringy, and the newer Living-room genotype is the least ringy. Both the older genotypes are sandwiched between the two newer genotypes (see table 6-15). Overall, ringiness does not seem to be an evolutionary item in genotypes.

Table 6-15: Genotypes and mean number of rings

Genotypes	Mean no. of rings	Mean no. of internal rings
DL-corridor type (seg. kitchen)	2.467	1.422
DL-corridor type (int. kitchen)	2.357	0.786
SL-corridor type	1.769	0.282
DL-corridor type (all seg. function spaces)	1.571	0.857
Orowa type	1	0
Living-room type	0.571	0.143

There are some distinct variations in the topological nature of the space labels, (see table 6-16, p186), that is, whether a space is a dead-end space or on a ring of spaces. A higher proportion of spaces that are on a circulation ring(s) [C, and D-spaces] usually corresponds to reduced step depth, Hillier (1998), and the sample generally follows this pattern except the DL-corridor (all segregated function spaces) genotype, which has a low proportion of C & D-spaces and the lowest mean step depth (see Table 6-15 and Table 6-16). A lower proportion of A and D-spaces on the other hand, is indicative of strongly categorised plans.

Table 6-16: Genotypes and nature of spaces

Genotypes	A-spaces	B-spaces	C-spaces	D-spaces	C & D-spaces	A & D spaces
SL-corridor type	49.2%	15.2%	30.0%	5.6%	35.6%	54.8%
DL-corridor type (seg. kitchen)	55.0%	12.0%	27.4%	5.0%	32.4%	60.0%
Orowa type	56.7%	14.4%	20.6%	8.2%	28.9%	64.9%
Living-room type	60.0%	21.2%	18.8%	0.0%	18.8%	60.0%
DL-corridor type (int. kitchen)	62.0%	12.8%	19.5%	5.8%	25.2%	67.8%
DL-corridor type (all seg. function spaces)	67.2%	7.3%	23.4%	2.2%	25.5%	69.3%

One of the new genotypes (SL-corridor genotype) has the smallest number of terminal spaces (49.2%) hence is strongly categorised,while one of the older genotypes [the DL-corridor (seg. function spaces) genotype], is the least categorised with 67.2% of dead-end spaces. Although the Orowa genotype has only a mid-range mean number of rings, a high percentage of its space labels are on these rings; different from the other types. The A and D-spaces results for the six genotypes (54.8% to 69.3%), is slightly higher than Kirsan's (2003) results (51.8% to 57%), which is based on a sample of two hundred and ten Greek and Cypriot houses, but the C & D-spaces range obtained (18.8% to 35.6%), is comparable with Kirsan's results (19.4% to 43.8%).

The key space labels- living room, kitchen and bedroom, also show some changes in the nature of the spaces, with the main point of departure occuring in the DL-corridor (seg. kitchen) genotype, where the living rooms and kitchens are mainly C-spaces (see Table 6-17, pg 187). Generally, for the living room and the kitchen, there is a move from being A-spaces in older genotypes to more C-spaces in the new genotypes. The bedroom on the other hand remains strongly located in terminal spaces, though there is a slight move from being almost all A-spaces in the old and intermediate genotypes, to a mixture of A and B-spaces in the newer SL-corridor genotype.

Table 6-17: Key space labels and nature of spaces

Genotype	livingroom	kitchen	bedroom
DL-corridor type (seg. kitchen)	Mainly C-spaces	Split btw A and C-spaces	predominantly A-spaces
SL-corridor type	Split btw C and A/B-spaces	Mainly C-spaces	Almost all A-spaces
DL-corridor type (int. kitchen)	Split btw C and A-spaces	Almost all A-spaces	All A-spaces
Living-room type	Split btw C and B-spaces	Split btw A, B and C-spaces	Split btw A and B-spaces
DL-corridor type (all seg. function spaces)	Mainly A-spaces	All A-spaces	Mainly A-spaces
Orowa type	Split btw C/D and A/B spaces	Mainly A & B-spaces	Almost all A-spaces

In line with the shifts identified above, it is also likely that changes in the relationship between the key space labels have occurred, in terms of their syntactic relative positioning in relation to one other in each genotype. The summary of the ranking of the key space labels in each inequality genotype demonstrates the existence of such movements/shift (see table 6-18, p188): - The bedroom, and corridor are consistently ranked across board, but the living room and kitchen show some movement in their ranking with both becoming less segregated in the newer genotypes.

It is noted that the kitchen in the enduring genotype [the DL-corridor (seg. kitchen) genotype] is more consistent with the old genotypes, but we have an exception in the DL-corridor (int. kitchen) genotype where the the living room is quite segregated. These shifts in positioning as was suggested earlier, is a consequence of social changes either in the form of new activities/objects, new technology or adapting social conditions.

Table 6-18:Integration and depth ranking of key space labels in the genotypes

	Ranking of depth values of key space labels in each Genotype				
Genotypes	orowa	living rm	kitchen	bedroom	corridor
Orowa type	1st	2nd	3rd	4th	2nd
DL-corridor type (all seg. function spaces)		3rd	2nd	4th	1st
DL-corridor type (int. kitchen)		3rd	1st	4th	2nd
SL-corridor type		1st	3rd	4th	2nd
Living-room type		1st	2nd	4th	3rd
DL-corridor type (seg. kitchen)		2nd	3rd	4th	1st

Genotypes (integration ranking)	**orowa**	**living rm**	**kitchen**	**bedroom**	**corridor**
Orowa type	1st	2rd	4th	3th	-
DL-corridor type (all seg. function spaces)	-	3th	2rd	4th	1st
DL-corridor type (int. kitchen)	-	3th	2th	4th	1st
SL-corridor type	-	2nd	3rd	4th	1st
Living-room type	-	1st	3rd	4th	2nd
DL-corridor type (seg. kitchen)	-	2nd	4th	3th	1st

6.1.3.1 Genotypes and Spatial Variables

The tables overleaf show a summary of three spatial variables (the habitable rooms: mean number of cells ratio, the transition: function ratio and the nature of control of the domestic space), and the underlying idea is that enduring genotypes will have values between the old and new genotypes. This is the case with all the three variables (see Table 6-19, pg 189), showing that the functional size has also increased from the old to the new genotypes, but the most enduring genotype [the DL-corridor type (seg. kitchen) genotype], has a value that is closer to the Orowa genotype.

In terms of control over the domestic space, while the newer SL-corridor, and the Living-room genotypes are predominantly self-contained, the others are shared, apart from the DL-corridor type (seg. kitchen)which has a mix of types of units (see Table 6-19).

Table 6-19: Genotypes and spatial variables

Genotypes	DL-corridor type (int. kitchen)	DL-corridor type (seg. function spaces)	DL-corridor type (seg. kitchen)	Orowa type	SL-corridor type	Living-room type
mean no. of cells ©	23.8	13.5	17.423	11.706	15.075	14.429
mean no. of bedrooms	2.333	1.333	2.212	2.118	2.625	3.357
mean no. of habitable rms (HR)	3.267	2.444	3.442	2.882	3.95	4.357
HR:C ratio	0.13	0.211	0.243	0.263	0.28	0.308

Genotypes	Orowa type	DL-corridor type (seg. kitchen)	DL-corridor type (seg. function spaces)	DL-corridor type (int. kitchen)	SL-corridor type	Living-room type
trans: function ratio	0.139	0.165	0.222	0.237	0.275	0.294
	Old type	intermediate	New type	Enduring type		

Table 6-20: Genotypes and control of the domestic space

Degree of control over dwelling	DL-corridor type (seg. kitchen)	SL-corridor type	Living-room type	DL-corridor type (int. kitchen)	DL-corridor type (seg. function spaces)	Orowa type
self-contained	18	39	14	3	1	0
shared facilities	34	1	0	12	9	17

6.1.3.2 *Genotypes and Socio-economic Variables*

The emergence of new genotypes and the absence of the old genotypes in newer housing areas is in direct response to specific socio-economic transformations. Genotypes that are restricted in location, are perhaps more suited to a specific socio-economic section. Of the three main socio-economic factors assessed- income, educational levels and forms of tenure, differences between genotypes related strongly to income, and to the form of tenure, which is to a large extent influenced by the household's income (see Table 6-21 overleaf).

Table 6-21: Genotypes and socio-economic variables

Tenure	DL-corridor type (seg. kitchen)	SL-corridor type	Living-room type	DL-corridor type (int. kitchen)	DL-corridor type (seg. function spaces)	Orowa type
owner-occupied	14	0	1	4	5	12
rented	38	40	13	11	5	5

Income level of household	DL-corridor type (seg. kitchen)	SL-corridor type	Living-room type	DL-corridor type (int. kitchen)	DL-corridor type (seg. function spaces)	Orowa type
low income	7	3	0	5	3	8
average income	20	15	1	2	5	6
middle income	18	19	12	8	0	3

Education- %tage of respondents	DL-corridor type (seg. kitchen)	SL-corridor type	Living-room type	DL-corridor type (int. kitchen)	DL-corridor type (seg. function spaces)	Orowa type
with diploma or degree	40.40%	67.50%	64.20%	33.30%	10%	5.90%
with university degree	23.10%	37.50%	57.10%	13.3%	0%	0%
	Old- type	intermediate	Newer type	Enduring type		

The SL-corridor, and the Living-room genotypes are mainly rented, and popular with well educated, average income, and middle-income households, hence restricted to the campus and estates. The DL-corridor (int. kitchen) genotype occurs in the four areas, though moreso in Akarabata, and is slightly more blurred, occuring in the rental, and owner-occupied sectors, and is common in lower and average income households, that are less educated than those in the SL-corridor, and Living-room genotypes.

The two genotypes restricted to the older areas also show a mix of tenure, but with more owner-occupiers that are mostly low and average income households, of whom only a few of the respondents have post-secondary education. While the enduring, DL-corridor (seg. kitchen) genotype is mainly rented and a significant number respondents in the genotype were diploma and college degree holders, it was uncommon in low-income households, a bias not immediately obvious because it occurred in all four areas.

There was little evidence of a strong correlation between spatial differences and general satisfaction with the dwelling, as similar percentages had given their dwelling good or excellent ratings. The exception was the Orowa genotype with significantly more satisfied respondents. Perhaps the positive perceptions about the dwellings is because they are reasonably well suited to the way people live, there is sufficient flexibility within the configuration, or aspirations have been curtailed by the reality of the accommodation.

6.1.4 Summary: - Spatial patterns and compatibility with lifestyle choices

The decrease in mean integration from the older and intermediate genotypes, to the new genotypes with the enduring genotype in-between, and the opposing pattern occurring with mean overall step depth, seems suited to some of the socio-economic changes that have occured in the region. The shift from function focussed, to transition focussed integration, from the older to newer genotypes, is consistent with the increase in nuclear family households, and the enlarged waged economy. The by-product of this is the separation of certain functions from the domestic space, and the maturation of idea that certain aspects of the household's life are more 'private', and that access by non-inhabitants need to be controlled to those areas. This seems to go hand-in-hand with increased overall step depth in the new genotypes, particularly in the campus and estates. The transition integration model also works failry well in predominantly tenement genotypes, where transition spaces serve as connective tissue between parts of the dwelling that are used by multiple households. The ringiness of the enduring genotype, which contains many tenements, also gives added flexibility for multi-household occupation, whilst the less ringy nature of the new ones make them less flexible for multi-household use.

The (A-space), dead-end status of the bedroom is almost unchanged across the genotypes but, the living room and kitchen show a shift from dead-end spaces in older genotypes to more ringy locations in the newer ones, and in the enduring genotype. The relative positioning of key space labels based on integration and depth, shows that bedrooms, and corridors are consistent across genotypes. Living rooms and kitchens though, are less segregated in the newer genotypes, with the kitchen becoming more than just a service space, and more of a place where socialisation with friends can take place, which some respondents in the new genotypes made reference to. This has been enabled by the fact that water and drainage are incorporated within the kitchen in self-contained units, making it easier to restrict messy and wet activities within it.

The mean no. of bedrooms, HR:MC ratio, and T:F ratio, increased in the newer genotypes, but the enduring genotype performed closer to the old genotypes, creating a 'half-way point' in terms of geometric and syntactic performance. Older genotypes are almost all multi-household dwellings, the two newer ones are almost all single-household units, whilst the enduring type, and the DL-corridor (int. kitchen) genotype are a mix. This is relevant as the increased use of transition spaces to mediate between the sectors in the newer genotypes engenders increased privacy, and strengthens the distinction between inhabitant and visitor, making it possible to control visitor access spatially.

There are strong correlations between genotype and geometry, although it is only in the Orowa genotype that we have geometric exclusivity. Most genotypes were dominated by one/two shape geometries [with the exception of [DL-corridor (seg. kitchen) genotype], and the findings of geometric regularities in the genotypes is consistent with Heitor et al (2003).

There is an increase in geometric variation in the new areas, but a slight decrease in genotypical variations in the new areas, setting up a paradox of less genotypical variation masked by more geometric variation (and verse versa in older areas). The enduring genotype is also one of the most geometrically varied.

As expected, some genotypes (and geometric types) were closely identified to a socio-economic group. Less geometrically varied genotypes are generally more suited to a fairly homogenous social group, and this holds for the older ones, which are prevalent in the lower socio-economic groups. All three genotypes common to the lower socio-economic groups, have strong integrated function/transition spaces, highly segregated bedrooms, and distinct service sector, which makes sharing with other households easier. Conversely, genotypes commonly occupied by higher income households, (the SL-corridor genotype, and the Living-room genotype), are almost all self-contained, because sole control of the three sectors is a key aspect of privacy, and a valued feature for this group. As already noted, higher income, well-educated respondents made more mention about privacy in relation to their dwellings.

Finally, the genotypes common to the low income, less-educated group coincided strongly with geometric types, which performed relatively poorly on the geometric criteria, suggesting that some criteria are important markers between lifestyles. This is most evident in terms of a) the existence of clear separations between sectors and b) the elaboration of the indoor/outdoor threshold in the newer self-contained genotypes, both of which are pertinent to the perception of privacy needs. The genotypes prevalent in lower socio-economic groups were dominated by the long corridor shape geometry and the genotypes common to higher socio-economic groups by more compact models.

6.1.5 Key Rules in the old and newer spatial types chart

OLD GENOTYPES	Key characteristics
Rule 1)	The strong integration focus on the orowa or corridor, and the strong segregation of service areas –kitchen, toilet and bathroom.
Rule 2)	Shallow depth of interior spaces from the exterior, which makes sense due to the fact that several activities are conducted outdoors (explored in detail in chapter seven),
Rule 3)	The distinct low transition: function ratio; very few purely transition space labels. Connectivity is directly between function spaces.
Rule 4)	The only criteria of the geometric grammar that is clearly mapped in the older genotypes is the separation of the service spaces- toilet and bathroom, and this is dictated by the extent of technology, and also by a cultural distinction between what is clean and dirty, as the effluent from both spaces is considered dirty.

NEW GENOTYPES	The new genotypes reflect changes to rules 2, 3, and 4,
Rule 1A)	Decreased segregation of specific spaces (Living room and Kitchen),
Rule 2A)	Increased depth of interior spaces from the exterior,
Rule 3A)	Increased transition spaces which helps to achieve the changes made to rule 4. Connectivity mainly by transitions spaces.
Rule 4A)	Separation of the sectors in most newer geometric types, particularly separating the living from the sleeping spaces, by putting the bedrooms on a separate corridor.
Rule 5)	The distinct emphasis in separating inhabitant-visitor circulation,
Rule 6)	Improved integration in the kitchen drawing it closer to the living areas rather than separating it to the back of the house, and
Rule 7)	The increased elaboration of the threshold spaces which many use as the locus for dealing with strangers, as opposed to the situation in the older and some of the enduring genotypes cases, whereby strangers often walk into the centre corridor or orowa before being interrogated.

ENDURING GENOTYPES	
on Rules 1A - 4A	This genotype is halfway between the old and the new genotypes
Rules 5- 7	This genotype is performs closer to the older genotypes

Table 6-22: Core spatial, syntactic and social characteristics of the genotypes chart

	Criteria	Orowa genotype	(DL)-corridor (seg functions) type	(DL)-corridor (int. kitchen)	SL-corridor genotype	Living-room genotype	(DL)-corridor (seg. Kitchen) type
SYNTACTIC	Mean Integration	1.228	1.189	1.212	1.123	0.92	1.069
	Mean overall step Depth	3.588	3.2	4.867	4.4	5.429	4.308
	Most integrated Key space (transition or function)	OROWA (function space)	CORRIDOR (function and transition)	CORRIDOR (transition)	CORRIDOR (transition)	LIVING-ROOM (function)	CORRIDOR (function and transition)
	prevalent space-types for 1) living rm	C/D and A/B	A	C and A	C and A/B	C and B	C
	prevalent space-types for 2) kitchen	A and B	A	A	C	A, B, and C	A and C
	prevalent space-types for 3) bedroom	A	A	A	A	A and B	A
GEOMETRIC	performance on criteria 1 (separation between spatial cores)	No	No	No	Yes	Yes	No
	performance on criteria 4 (increase in transition spaces)	1	3	3	5	5	3
	Dominant Geometry	orowa-type	dble-loaded corridor	dble-loaded corridor	compact (non-courtyd)	compact (non-courtyd)	dble-loaded corridor
	Geometric variety	Low	Low	Medium	High	Medium	High
	Transition:function ratio	0.139	0.222	0.237	0.275	0.294	0.165
SOCIAL	Control of unit (self-contained or shared)	shared	shared	shared	self contained	self contained	mixed
	Income (Low, Average and Middle)	Low, and Average	Average	Low and Middle	Average, and Middle	Middle	Average, and Middle
	Education (most common level attained)	none/pry	secondary	secondary	diploma/degree	univ. degree	secondary
	Tenure (rented or owner-occupied)	owner-occupied	mixed	rented	rented	rented	rented
		Old type	intermediate	Newer type	Enduring type		

In all, the summary table shows that the old and new genotypes are clearly defined by a given set of spatial and syntactic performances that is not simply explained by infrastructural shortcomings, or accident, but it has been show in this chapter that some of these variations have been influenced by social and economic factors (e.g. income and education, tenure, and whether it is predominantly self-contained or shared). The next chapter continues with identifying core characteristics and differences in space use.

Chapter 7: Domestic Space Use Patterns

The chapter focuses on how intrinsic properties/relationships between activities and objects relate to space use, how these differ across the genotypes and how the patterns identified reflect the requirements of various lifestyles. The chapter discusses the conventions of activity and object locations across genotypes, and on the moderating effects of socio-economic and spatial filters on these patterns. The results supports the hypothesis that increased specialization of space has a positive correspondence with increased social complexities of the Yoruba society.

7.1 Questions about domestic space use patterns

The first part of the chapter continues the analysis by looking at the functional complexity of the genotypes, based on the emergence of a 'core' of space labels in each genotype. The second part of the chapter explores space use in terms of the following concepts.

A) The conventional activity and object locations in the genotypes are identified, and compared in terms of the degree of extensibility of activities and objects in physical space, in relation to Adams' (1995) concept of personal extensibility. Adams (1995) defines extensibility as the ability to overcome the 'problem' of distance, that is, how activities spill over designated boundaries (into distant social and ecological processes). Here, we refer to how activities/objects spill beyond conventional locations.

B) The second aspect relates to the impact of inherent characteristics of activities and objects on the specialisation of space. This relates to Kent's (1990), and Rapoport's (1990) hypothesis about the correlation between restrictions on space use, and increasing specialisation of society, and to Lefervbre's (1974,1984) ideas about the link between changing modes of production in society and the emergence of new spaces, outlined in chapter 2. Ideas about classification and framing of objects [Bernstein, 1973], and activity boundaries [Hanson, 1998], are also explored in relation to space specialisation.

C) The interest in space use led to a discussion on the intensity of movement patterns- how the interaction between activity and object locations generates movement patterns in the domestic space- and also about D) the intensity of focus, that is how often each space label is the most conventional location for various activities and objects. The chapter ends with a summary of a) degree of extensibility, b) specialisation of space, c) intensity of movement, and d) intensity of focus and how they reflect lifestyle differences.

7.1.1 Space Label inventory: -

An inventory of the space labels/functions was compiled from the 126 different floor plans in the sample. Seventeen labels were identified, but the inventory contains the thirteen labels (Table 7-1, pg197) that occur in at least 5% of the plans. The respondents description of the spaces were adopted, except in a few cases explained subsequently.

Table 7-1: Space Label Inventory in total sample

No. 1- Living room/Sitting room/Parlour
No. 2- Dining room
No.3- Kitchen
No. 4- Toilet
No.5- Bathroom/Shower
No.6- Main Bedroom
No.7- Bedroom (inc. children & guest rooms)
No.8- Passage/Corridor
No.9- Orowa
No.10- Veranda/Balcony
No.11- Store
No.12- Study and
No.13- Garage

Figure 7-1 below reveals the unequal numbers of each space labels in the sample and also the fact that no single space label is common to all the floor plans. This is partly affected by the inclusion of tenement accommodation in the sample, whereby many have just a one-room accommodation that was either described as a parlour, or a bedroom.

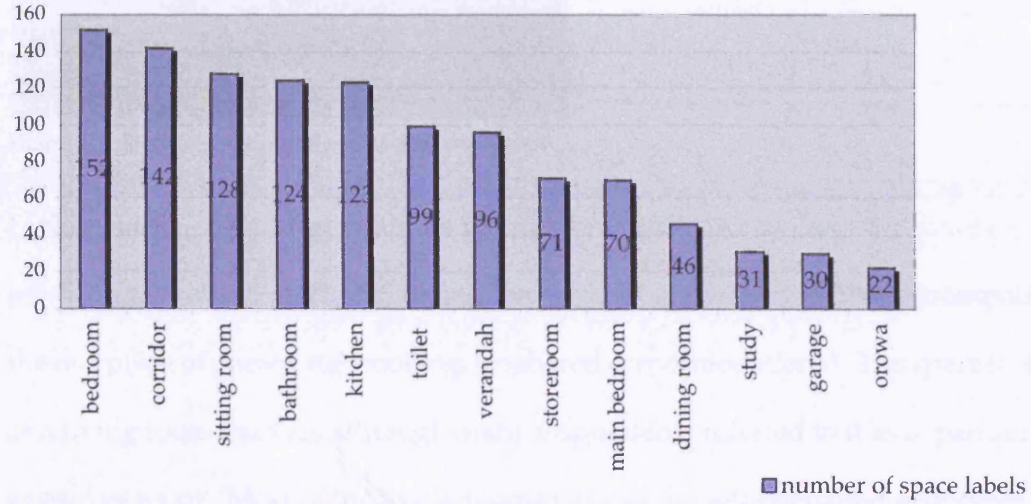


Figure 7-1:Number of each space label in the total sample

Some eight floor plans have no space labelled as a bedroom because they use their parlour for sleeping. The variation in space label combination is manifested in the genotypes/ geometric types, with the self-contained ones having a wider range of space labels, and some differences in activity and object content, as will be seen in the next section. Firstly, each space is briefly introduced, with the key space labels described first.

Bedroom: - is a generic term that includes guest rooms and children's bedrooms where they occur, and is the most common space label in the sample. The bedroom was sometimes also used for eating, for entertaining close friends, storage etc. Almost all domestic spaces have at least one bedroom, apart from the eight plans mentioned above.

Corridor: - This space (often called 'passage' or 'oode') is common to most of the genotypes. It is usually less than 1.5m width and used mainly for circulation in self-contained accommodations, but it is often a wider space (1.5-2.0m width) in shared accommodations, where it is also used for other activities.

Figure 7-2: Storage of water and pots in a corridor space

Living room: - The living room is the main reception room used for family living and relaxation, reading, studying, eating, and occasionally for activities incompatible with the reception of guests, e.g. cooking, (in shared accommodations). The space is described as a living room because although many respondents referred to it as a 'parlour', it is an everyday room. Most of the living rooms were in the self-contained genotypes.

Kitchen: - A designated kitchen was found in 123 households, but some multiple household dwellings lack kitchens so, cooking takes place in the corridor, orowa, and veranda. The kitchens in shared accommodations lack fixed work-surfaces and because the space is shared, cooking implements and foodstuffs were rarely kept there. Kitchens in self-contained dwellings were better fitted out with built-in cupboards and worktops, which made storage more common in the new, and the enduring genotypes.

Orowa: - It is distinctive because it is almost exclusive to the traditional genotype, and is usually between 3.5 to 4.5 metres wide. It serves as the circulation link to many rooms in the dwelling, as well as being an important activtity space for cooking, relaxation, and storage, despite the fact that it is shared with other related households.

Bathroom/shower: - It is an integral part of self-contained domestic spaces, but it is usually separated from the main dwelling in shared accommodations. All the self-contained plans have a bathroom suite and shower, but the shared accommodations only have a shower space, with little infrastructure.

Toilet: - Although most households claimed to have a toilet, physical evidence was not always available in Akarabata and Enuwa. In these areas, the toilet is sometimes shared with other houses, or with other households in the dwelling. It is either a wc. toilet, or a pit latrine, in the tenements and family compound houses, or a w.c. toilet in self-contained domestic spaces[74].

Veranda & Balcony: - The veranda/balcony is common in Yoruba dwellings, as the provision of shaded spaces is very useful in the hot humid weather. It was found in 66% of tenements, 59% of the flats, and in 84% of the duplexes, in shared, and in self-contained units. The veranda is more a transition space when it is in the front of the dwelling, but is often used for relaxation, whilst the balcony is more of a function space.

Storeroom: - Designated storerooms were in slightly less than half of the total sample, mostly in the enduring genotype, and one of the new genotypes, many of which had two stores: - one for cooking related objects, and an all-purpose one. It is uncommon in older, shared-accommodation, and it is almost always all-purpose where it exists. Its low occurrence in shared accommodations is driven by the need to maximise rental space, and also by the fact that traditional storage had been in form of barns, and the use of incidental spaces e.g. hooks fixed to walls, for storage was the norm.

Main/Master Bedroom:- This is for the primary use of the parents, or male heads of households and sometimes for very young children/babies who sleep in their parents

[74] This compares with the national average in National Population Commission (2001) which states that about 12% of dwellings in urban areas do not have any kind of toilet facility.

bed; a common practice amongst the Yorubas. Seventy households have a main bedroom, but it is rare in extended family households and tenements- only three were Enuwa- and these belonged to the (male) head of the extended family, and the wives had a separate bedroom that is also used by young dependents.

Dining room: - the dining space as a distinct convex space occurs in forty-six households and is almost always used for other activities e.g. reading/studying, ironing, etc. They are almost all restricted to the newer genotypes, although many more households had dining tables in their living room.

Study: - Only thirty-one households in the total sample had a designated study (20%). This is a new space label that is completely absent in the older genotypes.

Garage: - The garage is also a new label 'type' that was completely absent prior to the introduction of cars to the region in the colonial era, and occurred in less than 20% of the total sample. It is restricted to more affluent areas where commercial returns are less of a concern (mainly the campus). Only lock-up garages are recorded and open carports (with canopies), found in many domestic spaces in the campus were excluded.

The bakery, and laundry occurred in less than 5% of the total sample, but another label that occurred in significant numbers is the shop /kiosk, which is considered separately under the discussion on the domestic space as 'workplace' in chapter 8. The uneven distribution of the thirteen space labels across genotypes and areas is critical to the argument about the historicity of specific spaces. This is characterised by the elimination of some traditional internal spaces, and the incorporation of new function spaces- a process of identification of continuities (and discontinuities) manifested in spatial terminology [Yates (1991)]. The development of 'core' space labels are explored next.

7.1.2 Core space labels in the sample

The most frequently occuring space labels in the six genotypes are shown in Table 7-2, based on space labels that occur in more than 66% of the floor plans in each genotype (described as group I labels). Also, labels found in 33% to 66% of the plans in each genotype (referred to as group II spaces), and those found in less than 33% of the plans in each genotype (subsequently described as group III labels) are in Table 7-3 p203.

Table 7-2 shows an increase in the numbers of most common space labels (group I), from the older to the newer genotypes. This is the *'functional core'* of each genotype, and it reflects differences between shared and self contained types, and between dwelling types as the family compounds, and tenements have a smaller functional core than the flats, semi-detached, and detached houses.

Table 7-2: most common space labels in the main genotypes

Orowa genotype (17 floor plans)	DL-corridor (function spaces seg.) genotype (11 floor plans)	DL-corridor (segregated kitchen) genotype (52 floor plans)	Living-room genotype (14 floor plans)	DL-corridor (integrated kitchen) genotype (15 floor plans)	SL-corridor (integrated kitchen) genotype (40 floor plans)
spaces that occur in over 66% of the floor plans in genotype	spaces that occur in over 66% of the floor plans in genotype	spaces that occur in over 66% of the floor plans in genotype	spaces that occur in over 66% of the floor plans in genotype	spaces that occur in over 66% of the floor plans in genotype	spaces that occur in over 66% of the floor plans in genotype
sitting room	**sitting room**	**sitting room**	**sitting room**	**sitting room**	**sitting room**
bedroom	**bedroom**	**kitchen**	**kitchen**	**kitchen**	**kitchen**
orowa		**bathroom**	**toilet**	**toilet**	**toilet**
		bedroom	**bathroom**	**bathroom**	**bathroom**
		corridor	**bedroom**	**main bedroom**	**bedroom**
		verandah	**corridor**	**bedroom**	**corridor**
				corridor	**verandah**
				verandah	
				storeroom	

Older genotypes intermediate genotype newer genotypes enduring genotype

The expansion of the functional core is demostrated by the appearance of the dining room, study, and garage in the DL-corridor (int kitchen), the SL-corridor, and the Living room genotypes; newer labels that are mostly occupied by higher income, educated households. The notion of a gradual emergence of a functional core is also reflected to a lesser extent by the shifts in designated storerooms, and the main bedroom from peripheral relevance (group III) in the older genotypes, to the functional core (group I), in enduring and newer genotypes, becoming more fundamental to the identity of these genotypes. The orowa is the only phased out space label in the newer genotypes, while the most consistent labels are the living room and bedroom (see Table 7-3).

Table 7-3: Core space labels in the six main genotypes

Old genotypes

Orowa genotype (17 floor plans)			DL-corridor (function spaces seg.) genotype (11 floor plans)		
Space Labels that occur in 66% of the floor plans in the genotype	Space Labels that occur in 33% - 66% of the floor plans in the genotype	Space Labels that occur in less than 33% of the floor plans in the genotype	Space Labels that occur in 66% of the floor plans in the genotype	Space Labels that occur in 33% - 66% of the floor plans in the genotype	Space Labels that occur in less than 33% of the floor plans in the genotype
sitting room	kitchen	toilet	**sitting room**	kitchen	main bedroom
bedroom	bathroom	main bedroom	**bedroom**	toilet	storeroom
orowa	corridor	storeroom		bathroom	
	verandah			corridor	
				verandah	

* New labels are in red, non-enduring labels are in blue, enduring labels in black. Underlined labels are most common in the total sample

Enduring and intermediate genotypes

DL-corridor (segregated kitchen) genotype (52 floor plans)			Living-room genotype (14 floor plans)		
Space Labels that occur in 66% of the floor plans in the genotype	Space Labels that occur in 33% - 66% of the floor plans in the genotype	Space Labels that occur in less than 33% of the floor plans in the genotype	Space Labels that occur in 66% of the floor plans in the genotype	Space Labels that occur in 33% - 66% of the floor plans in the genotype	Space Labels that occur in less than 33% of the floor plans in the genotype
sitting room	toilet	dining room	**sitting room**	verandah	dining room
kitchen	main bedroom	orowa	**kitchen**	storeroom	main bedroom
bathroom	storeroom	study	**toilet**		garage
bedroom			**bathroom**		
corridor			**bedroom**		
verandah			**corridor**		

* New labels are in red, non-enduring labels are in blue, enduring labels in black. Underlined labels are most common in the total sample

New genotypes

DL-corridor (integrated kitchen) genotype (15 floor plans)			SL-corridor (integrated kitchen) genotype (40 floor plans)		
Space Labels that occur in 66% of the floor plans in the genotype	Space Labels that occur in 33% - 66% of the floor plans in the genotype	Space Labels that occur in less than 33% of the floor plans in the genotype	Space Labels that occur in 66% of the floor plans in the genotype	Space Labels that occur in 33% - 66% of the floor plans in the genotype	Space Labels that occur in less than 33% of the floor plans in the genotype
sitting room	dining room	study	**sitting room**	dining room	
kitchen		garage	**kitchen**	main bedroom	
toilet			**toilet**	storeroom	
bathroom			**bathroom**	study	
main bedroom			**bedroom**	garage	
bedroom			**corridor**		
corridor			**verandah**		
verandah					
storeroom					

*Note: new labels are in red, old non-endurring labels are in blue, endurring labels in black, and those that are underlined are the most prevalent across genotypes

In summary, the total sample (see Table 7-4, p204) shows the newer space labels in group II/III (study, garage), as well as spaces that no longer feature in newer types (orowa).

Table 7-4: Core space labels in the total sample

Total Sample		
Occurs in over 66% of the plans	Occurs in between 33-66% of the plans	Occurs in less than 33% of the plans
Living room	Toilet	Dining room
Kitchen	Main Bedroom	Orowa
Bathroom	Veranda	Study
Bedroom	Store	Garage
Corridor		

The concept of functional core labels is about the level of functional complexity normative in each genotype, that are also almost always part and parcel of the description grammar of each genotype/geometric type (Heitor et. al. 2003). This core is also by extension, related to a given way of life or at least to a socio-economic group, because each genotype was identified fairly strongly with a specific group in chapter 6. The shift of some labels from peripheral importance in some genotypes, to the core in others, is also reflected in changes in the integration values (e.g. storeroom, and main bedroom), as they became more mainstream to a particular way of life. New space labels such as the study, garage are group II spaces in the new genotypes, where they are also more relevant to the needs of the highly educated and financially stable households that use them, whilst absent in the older ones. Nonetheless, the fact that these spaces have not yet made the transition into group I, suggests that it takes the passage of time, coupled with increased relevance based on changing social values to make a new space ubiquitous.

Increased access to tertiary education, increases in income level, and increased exposure to other cultures, which for many have come via educational opportunities abroad, have influenced the professional educated elite, and their homes, via changes in the perception of what ought to be standard provision in the domestic space. The new labels accommodate activities previously, crammed in with other activities in traditional genotypes, e.g. the dining room for eating, previously done in the orowa, as well as for new activities like reading/studying, lending some support to Kent (1990), and Rapoport (1990), hypothesis of the link between space use and society.

This key issue- changes in the variety of space use- is also about the strength of boundary separation between groups of domestic objects and activities that are allowed to be in the same space in each genotype, and would reflect the new collective norm, as well as

effects of spatial and economic limitations. Space labels in genotypes with fewer core space labels are more likely to have a large and varied array of objects that may also be in different kinds of relationships in various households, reflecting responses to the limited number of core space labels at their disposal. Relative fluidity of objects and activities across space labels, and the type of items contained in the arrays in smaller functional complexes are likely to show a weakening of framing and classification rules, in comparison to larger functional complexes. Classification and framing of activities and objects, are explored in the next section, but next we turn our attention to the convention of activity and object location to see if this hypothesis holds.

7.1.3 Convention of Activity Locations:

The questions with regards to the convention of activity locations in the genotypes are: - What consistencies and differences exist in the location of activities around the domestic space? What are the differences in the activity and object contents of each genotype and how do these relate to lifestyle differences? An inventory of the activities was built up from the respondents' answers. Twenty-two different activities were found, but the 5% rule reduced the inventory to twenty activities (see Table 7-5, p207). The process of establishing the convention of locations involved listing all activities found within the 'boundary' of each space label for the total sample and respective genotypes, and identifying the most common locations for each activity. A profile of the spatial extensibility of each activity was based on ranking the number of locations in which each activity occurred, and this were analysed for genotypical differences. The activity inventory is listed from the activity in the most locations, to the least.

Table 7-5: Activity Inventory for the total sample

act. 1 - Family relaxation & entertainment	*act. 11 - Trading & retailing*
act. 2 – Storing (food and general purpose)	*act. 12 - Laundry and clothes drying*
act. 3 - Eating	*act. 13 - Animal rearing*
act. 4 - Reading & Studying	*act. 14 - Toilet use*
act. 5 - Sleeping & daily toiletry	*act. 15 - Host social events/ceremonies*
act. 6 - Religious activity	*act. 16 - Water collection and storing*
act. 7 - Entertaining guests	*act. 17 - Bathing*
act. 8 - Ironing	*act. 18 - Sewing*
act. 9 - Cooking (daily & occasional)	*act. 19 - Sports activity*
act. 10 - Food preparation & processing	*act. 20 - other: - manufacturing, parking cars. etc*

7.1.3.1 Location of activities: degree of extensibility and genotypical differences

The activities are shown overleaf in Table 7-6 from the most extensible (family living) to the least extensible, (e.g. bathing). The table also shows family living, storing, eating, etc. in many locations, suggesting that flexible rules are at play based on the activity's inherent and cultural requirements, as well as responses to the dwellings shortcomings. Each activity described below.

Family relaxation & entertainment: - includes watching television, chatting, reading magazines/newspapers. The majority use the living room, and veranda for relaxation, particularly where the veranda faces the main road, to enable people/traffic watching. Other spaces used are the dining room and study. (no. of locations = 11 space labels).

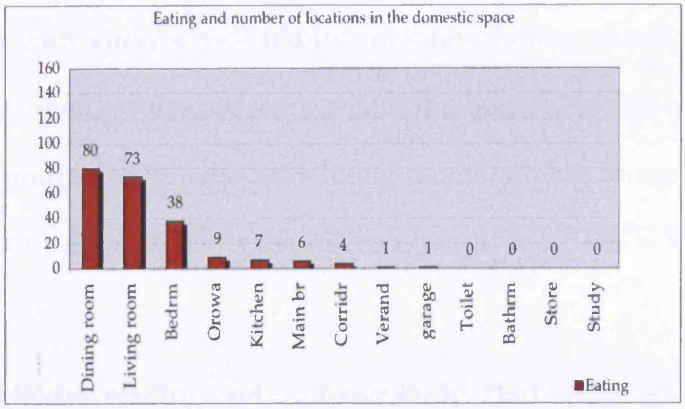
Food & general purpose storing was identified by many respondents as a bona fide domestic activity, describing storing objects until later use on a regular or occassional basis. The most common spaces for storing apart from the storeroom, were the corridor, bedroom, and the kitchen, based on whether it is shared/self-contained, and the functional size of the genotype in question (no. of locations = 11 space labels).

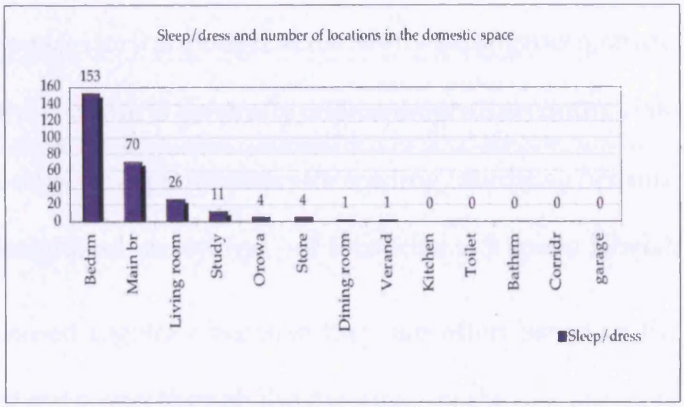
Table 7-6: Convention of activity locations in total sample

SUMMARY OF CONVENTION OF ACTIVITY LOCATIONS	total locations
Family Living	11
General storing	11
Eating	9
Reading / study	9
Sleeping / dressing	8
Religious	7
Entertainment	7
Ironing	7
Cooking	6
Food preperation	6
Retailing	5
Laundry	4
Animals	3
Toileting	3
Host Events	2
Watercollect	2
Bathing	1
Sewing	1
Sports	0
Other*	7
total no. of activities in each space	
total no. of times that each space is the most common and 2nd most common location for any object	

Most extensible

Least extensible





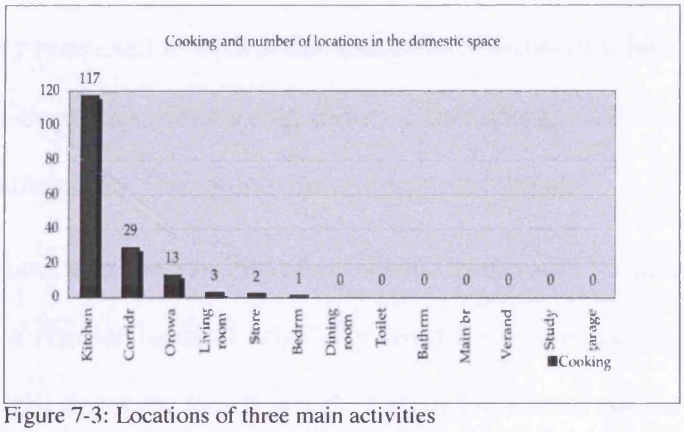


Figure 7-3: Locations of three main activities

Eating: - The only meal most households share together is the evening meal, since most household members arrive at home from work/school at different times. Eating usually occurred in the living room, dining room, or the bedroom where the household has a one-room accommodation. Some young people who have living rooms/dining rooms eat occasionally in the bedroom, but very few eat in the kitchen (no. of locations = 9 space labels).

Reading & studying: - Refers to non-leisure reading, and academic study. The living room and bedroom were the most common spaces for it although, some use the dining room, study, or the corridor (in tenements where the corridor is generally wide enough to accommodate furniture). Most households use at least two different spaces for reading/studying because many households do not have a designated study. (no. of locations = 9 space labels).

Sleeping & Dressing up were grouped together because they are often based in the same location and are mainly carried out alone, though the dynamics of the two are quite distinct. Getting dressed is relatively restricted to bedrooms, except in tenements where the household with one-room units also sleep in the living room. Other spaces used for sleeping are orowa, study, and the storeroom (no. of locations = 8 space labels).

Religious activity: - (Christianity, Islam, and the worship of ancestral/traditional Yoruba gods). They are all conducted on a regular basis at relatively fixed times within one space label, or may involve a part of the domestic space, which is accorded sacred status. It usually involves praying, reading, pouring of libations to dead ancestors, singing and dancing. The most popular location is the living room for semi formal gathering with visitors, and the bedroom for private prayers (no. of locations = 7 spaces).

Entertaining guests: - This refers to informal entertainent of guests. It often involves the provision of light refreshments, watching t.v./videos, playing board games. The living room is the most commonly used space for entertaining, but a few other space were implicated- e.g. the bedroom, the dining room, kitchen (by women and their female friends) etc. (no. of locations = 7 space labels).

Ironing: - Typically involves the adaptation of horizontal surfaces e.g. table, bed, on a floor mat, or even on top of a freezer covered with a blanket, because few owned ironing boards. Irons are electric, or coal that is heated up on a stove. The majority used the dining room or corridor for ironing while a few used the bedrooms, store, and study. There is a divergence between where clothing and iron are kept, and ironing occurs. This is an important activity because it helps prevent infestation of bugs/parasites. (no. of locations = 7 space labels).

Cooking: - Everyday cooking often involves several household members (usually female) and lots of movement between spaces to retrieve implements, and food particularly in tenements. This is distinguished from occasional ceremonial cooking, which usually differs in location, and participation (often involves professional cooks and male participants e.g. butchers). Most households cook in a designated kitchen, but in the absence of one, cooking takes place in the corridor, orowa, and outside. This is enabled by the widespread use of portable kerosene stoves (similar to camping stoves), particularly where kitchens are absent/shared. Despite the relative fluidity of locations, cooking is generally identified with one space in individual households. (locations = 6 space labels).

Food preparation & processing: - Many food items in Yoruba land require significant manual processing by the household [e.g. making *Gari* from cassava, washing vegetables free of bugs/remnant of soil, making *Ogi* (cornmeal)], as most are sold in their raw state,

and some households also grow part of their food supply. Processing is a regular event and is often independent of cooking, has seasonal peaks and lows. Food preparation refers to the daily aspect of food transformation. Both aspects have a female bias and require the retrieval of large quantities of water and containers from different parts of the domestic space, or from outside. Although not many respondents mentioned this activity, the majority use the kitchen or outdoors for this purpose (no. of locations = 6 space labels).

Retailing shops and kiosks were found in sixty-six domestic premises surveyed, of which forty-six were owned by the households interviewed. Although evidence of retail goods was found in only fifteen households, the fact that about a quarter of the households engaged in retail activities, and its historic presence in Yoruba domestic life, reinforces its domestic status. Often, the domestic space is a 'storage' base for retail objects that are sold at another venue. The most commonly used space for retailing is the veranda to capture passing trade, although one respondent each used the dining room, corridor, orowa, and the garage for retail activities. (no. of locations = 5 space labels).

Laundry and clothes drying is heavily reliant on hand-washing and the manual retrieval of water and plastic basins (very few households owned a washing machine). Both activities generally take place outdoors, but are also strongly identified with the bathroom. The few people who used other indoor spaces apart from the bathroom for laundry live in multi-household accommodations, where lack of infrastructure in the bathroom makes it a non-starter for laundry (no. of locations = 4 space labels).

Animal rearing (of chickens, goats, etc) was mentioned by six respondents, but there was physical evidence of it in twenty-four plans. Actual rearing takes place outdoors, but the animals are sometimes brought indoors at night. The main focus is the orowa and as might be expected, it has restricted extensibility (no. of locations = 3 space labels).

Bathing and **using the toilet** are recorded separately. They are strongly identified with one or two locations, but often require water retrieval from other spaces/outside due to infrastructure inadequacies, hence have a wider extensibility for the location of related objects. A single respondent used the orowa for toileting, for little children on a potty. (bathing: locations = 1 space label, toileting: - locations = 3 space labels).

Hosting social events: - Includes birthday parties, wedding receptions, social club meetings, etc. Often, spaces outside the dwelling are used, with temporary gazebos and rented furniture put up for these gatherings. It is restricted to the living room and orowa, but other spaces may become accessible to visitors involved in the preparations e.g. cooking, arranging of furniture (no. of locations = 2 space labels).

Water collection and storing- Although only mentioned by two respondents, over eighty households had water storage (traditional vats (amu), water drums, and portable plastic water containers). The lack of pipe-borne water in many homes in Enuwa, Akarabata means that alternative sources are required- on-site wells, public water taps, or private water truck suppliers, for those who can afford it. It usually involves both genders.

Sports activity was mentioned by forty-one respondents as a domestic activity. It includes games like playing football, table tennis, hopscotch, hide & seek etc. that all take place outdoors (no. of locations = none).

Sewing was mentioned by only just one respondent, but similar to watercollecting, twenty-two households had a sewing machine. It is either inherited from a parent, or just stands as a sign that a member of the household (usually female) possesses an esteemed skill. Only one space label was identified with the activity.

Miscellaneous: - Activities such as parking cars/bikes and light manufacturing were grouped together because they were each mentioned by less than 5% of the respondents, but for which physical evidence exists in a significant number of domestic spaces e.g. car ports or garages. The most mentioned activity in this category is car parking hence the garage is the most usual location for it, but some keep their motorcycles and bicycles in the corridor, dining room, kitchen, bedroom, orowa, particularly in the tenements.

There were lots of similarities in activity locations across the genotypes. For instance, family living, general storing, reading/studying have a wide extensibility across board, while hosting social events, watercollecting, bathing, toileting and sewing, have limited extensibility within the dwellings. Just a few activities seem to behave differently across genotypes- ironing, food preparation, eating, reading/studying- amongst others, see Table 7-7, p214. Cooking and food preparation are much more restricted in location in the newer genotypes [the SL-corridor type, and the DL-corridor (int. kitchen) type] and the wide extensibility for eating activity evident in the total sample, is dictated by its many locations in the enduring genotype.

Ironing is opposite to this, with restricted extensibility in the enduring genotypes, and more extensibility in the newer genotypes due to the inherent flexibility of the activity itself. Religious activities and retailing, show some variation in extensibility, and the DL-corridor (int. kitchen) genotype is distinct in reflecting restricted extensibility for both activities.

Overall the DL-corridor (int. kitchen) genotype, and the DL-corridor (seg. function spaces) genotypes have the most restricted extensibility for many activities. Although only fifteen examples of the DL_corridor (seg. function spaces) genotype exist, it remains so, even when compared to genotypes of comparable cellular size, (the Orowa, and the Living-room genotypes).

Table 7-7: Activity locations and genotypical differences

number of locations of each activity	geno A	geno B	geno C	geno E	geno G	geno H	total sample
ironing	**1**	4	**1**	4	0	0	7
eating	8	3	4	3	4	3	9
cooking	4	3	4	**1**	4	4	6
food preparation	5	3	2	1	**1**	3	6
read/study	9	7	4	5	**1**	4	9
toileting	2	2	2	2	1	1	3
bathing	1	1	2	1	1	1	1
religious	3	6	2	2	**1**	4	7
retailing	2	4	2	1	0	2	5

*items in bold are with majorly reduced extensibility and those highlighted show are change in ranking relationship to other activities in the respective genotype.

Following on, activities that are concentrated in just one or two locations seem more normative, and dictated by the inherent characteristics of the activity. Religious activity, retailing, laundry, bathing, and toileting showed this strong focus in one/two spaces, while general storing, eating and reading/studying show a lack of dominance in their location patterns. In between these sets of activities were - family living, entertainment, cooking, and food preparation. This pattern holds across genotypes, except that eating is more strongly identified with just one location in the new genotypes.

7.1.4 Activity Locations and spatial characteristics

Here, we look at arrays of activities found in each of the thirteen space labels, with particular focus on the key space labels mentioned in chapter 6, because the extensibility of each activity, and the variety of activity array in each space label, affect the character of the spaces. Spaces range from those generic in character with a wide variety of activities (e.g. orowa), to space labels that are specialised containing just one or two activities, and show little variation in each plan, e.g. toilet.

In general, we find that the enduring genotype is consistent with the overall specialisation pattern found in the total sample with the orowa, veranda, corridor and the bedroom being non-specialised spaces. The orowa is the most non-specialised label with an array of 14 different possible activities found in the total sample. Conversely, the study, store, garage, and toilet are highly specialised. All of the six core labels in the enduring genotype [DL-corridor (seg. kitchen)] are also non-specialised containing a range of 5 to 7 activities, and a similar situation occurs in the SL-corridor genotype, but the DL-corridor (segregated function spaces) genotype has the highest number of specialised spaces- see Table 7-8, p216.

The genotypes differ mostly in the space labels listed in the table 7-8, with the most varied specialisation pattern occurring with the veranda, corridor, dining room and bathroom. The DL-corridor (int. kitchen) genotype contained more restricted arrays in the corridor, living room, and storeroom, in comparison to the others, and its living room is the most specialised of the six genotypes. When only the core labels in each genotype are considered, the highest proportions of specialised space labels is still in genotypes DL-corridor (seg. function spaces), and the Living-room genotypes.

In summary, there are many similarities across genotypes, and the size and nature of activity arrays only showed significant differences in some space labels. Household in genotypes with a smaller set of core labels, use these spaces in a very non-specialised way, but the new genotypes with larger functional complexes also have spaces which retain a generic nature (bedroom, living room). The most normative in terms of specialisation are the DL-corridor (seg. function spaces) and SL-corridor (int. kitchen) genotypes, and the least normative are the DL-corridor (seg kitchen) and SL-corridor genotypes.

Table 7-8: Differences in specialisation in the genotypes

number of activities in each location that shows a distinct difference	geno A	geno B	geno C	geno E	geno G	geno H	total sample
bedroom	7	8	7	7	**4**	7	10
verandah	7	5	6	4	**2**	**3**	11
corridor	7	4	5	**2**	3	5	11
living room	7	8	6	5	6	8	10
dining room	7	8	**2**	5	**2**	**0**	9
bathroom	5	5	4	3	**1**	3	6
kitchen	5	6	3	4	**2**	4	8
toilet	1	1	2	1	1	2	2
store	3	4	1	1	1	2	4
intensity of focus	bedroom & living room	bedroom & living room	bedroom	bedroom	bedroom & living room	orowa	bedroom & living room
no. of times space is the most common and 2nd most common location.	6	7	7	7	4	10	

Note: values in bold denote space labels with a reduced extensibility when compared to other genotypes.

7.1.5 Convention of Object locations

The thirty-nine object categories in the sample were allocated into categories based on whether they are utilised in the same activity e.g. *crockery* for plates, spoons, forks, knives, serving dishes, or whether they can be used interchangeably – e.g. (object category11 - stove/cooker). Objects that do not fulfil the above criteria were recorded as single objects – e.g. object 31 – sewing machine, see Table 7-9, p217. Only categories utilised in a non-standard manner are explained below (underlined in Table 7-9). The inventory is listed in order of frequency, from the most, to the least common (see Table 7-10, p219).

Table 7-9: Object Inventory

object 1 – Regular use furniture

object 2 – Crockery (daily & occasional – plates, cups, tumblers, saucers, cutlery, serving bowls & chinaware)

object 3 – Personal effects (clothes, shoes, undergarments)

object 4 – Print material (books, magazines, photo albums, pictures, paintings, textbooks, novels, calender).

object 5 – Food (raw & cooked – grains, roots & tubers, legumes, fruits, vegetables, soups & stews)

object 6 – Electronic gadgets (t.v, cassette player, radio, loudspeakers, video, tapes & cassettes, etc).

object 7 – Unused items (furniture, car spare parts, household equipment, kitchen appliances & bottles)

object 8 – Portable water containers [plastic kegs, traditional urns (amu), vats, large metal drums]

object 9 – Spare furniture [sleeping mats, mattresses, bed frames, sitting stools (apoti), benches, recliner]

object 10 – large bowls & basins

object 11 – Stove/Cooker

object 12 – Fuel (kerosene, portable butane gas cylinders, firewood, coal)

object 13 – Standing or table Fan

object 14 – Valuables (documents, jewellery and money)

object 15 – Fridge/Freezer

object 16 – Toiletries (body soap, shaving creams, sponges, towels)

object 17 – Kitchen utensils (pots, pans, ladles, strainer, colander, small sized plastic bowls, tupperware)

object 18 - kitchen appliances [mortar (odo) grinding stone (olo), kettle, blender, microwave]

object 19 Laundry (dry and wet – dirty in laundry basket and clean on clothes hanger/drier)

object 20 – Cleaning agents (detergents, soap, scouring pads & brushes, toilet brushes)

object 21 - Extra large pots (cast iron cauldrons, pots & pot stands)

object 22– Iron & ironing board

object 23 – crates and cartons of drinks (alcoholic & non-alcoholic)

object 24- Children's items (clothes, shoes, cots, feeding bottles, purifier)

object 25 – Farming tools (cutlass, hoes, rakes, axe)

object 26 – Cleaners (brooms, vacuum cleaners, dustbins)

object 27 – Animals (pets, goats, chickens, hamsters).

object 28 – Sewing machine

object 29– Vehicles (car, motorcycle, bicycle)

object 30 – Retail goods [food items, fabrics, fuel, tupperware, alcoholic & non-alcoholic beverages]

object 31 – Phone/computer & disks.

object 32 – Alcohol and Non-alcoholic beverages.

object 33 – Building material (window panes, cement bags, iron rods, roofing sheets, sand/gravel)

object 34 – Table covers (place mats & table cloths)

object 35 – Gift items (iron, blender, cutlery sets, chinaware)

object 36– Objects for worship (various including chieftain plaques, staffs of office)

object 37 – Portable lighting (lanterns, fluorescent bulbs, tubes & lamps, battery-powered lamps)

object 38 – Medication

object 39 – Plants (potted)

Table 7-10: Frequency of occurrence of each object in the sample

sum of quantities	Object categories	100 percentile mark is quivalent to 1 item per household (total no of households = 160)
654	regular use furniture	
262	Crockery	
258	Clothes,shoes,etc	
257	Print material	
219	Food(raw & cooked)	
196	Electronic gadgets	
158	Unused item	100 percentile mark
148	Portable water	
142	Spare furniture	
129	Bowls & basins	
120	Stove/cooker	
119	Fuel	75 percentile mark
115	Fan	
113	Valuables	
104	Fridge, freezer.	
104	Toiletries	
84	Kitchen utensils	
83	Kitchen appliance	50 percentile mark
72	Laundry	
65	Cleaning detergents	
61	Xtra large pots	
58	Iron/ironing board	
47	Crates & cartons	
45	Children's items	25 percentile mark
37	Farming tools	
35	Broom/vacumm cleaner	
29	Animals	
27	Sewing machine	
27	cars, motorbikes	
24	Retail goods	10 percentile mark
13	Phone/computer	
11	Alcoholic drinks/beverages	
10	Building materials	
7	Table covers	
6	Gift items	
6	Worship objects	
5	Portable lighting	
4	Medication	
4	Other-plants	

The eleven categories underlined in the inventory are explained below.

Portable water containers are a necessity where pipe borne water supply is infrequent or none existent, and water collecting requires the use of containers for fetching and storage, and is important for bathing, laundry, flushing the toilet, etc.

Spare furniture (sleeping mats, mattresses, bed frames, low seating stools (apoti), etc): - the peculiar objects in this category are traditional sleeping mats (eni) made of raffia that are laid directly on the floor in use, and rolled up in storage, and low seating wooden stools (apoti), between 250-350mm high with a seat of about 300x300mm. The height of the apoti is suited to aspects of food preparation in Yoruba culture that involve using the floor as a work surface e.g. using the mortar and pestle, and mixing food with a dough-like consistency e.g. amala (yam flour).

Large plastic bowls & basins was found in most households because a lot of Yoruba cooking involve a significant amount of food processing of farm/market produce. The bowls are used for laundry, rinsing, sieving and peeling, so storage is a pressing need.

Figure 7-4: Bowls, basins and vats for water storage

Stoves/cookers: - Kerosene stoves are used daily in Akarabata and Enuwa where none owned a gas/electric cooker, and its use is often supplemented with firewood (or coal). Even in the areas where the cooker is common, many also have a stove as a back-up.

Fuel (kerosine, portable gas cylinders, firewood, coal): - kerosine and gas cylinders are very popular due to the absence of main gas supply. Kerosine is usually stored in three litre plastic kegs or one-litre bottles. Firewood and coal are used in a hearth/coal pot.

Fan: - this is a main fixture in the tropics, and the standing/table fan is very popular as it can be moved around the domestic space where needed. It is cheaper than having a ceiling fan in every room and many households had one regardless of income levels.

Kitchen appliances (mortar (odo), grinding stone (olo), kettle, blender, microwave): - The mortar and pestle (odo and omo odo) are relatively common appliances used in Yoruba cooking. The *Odo* is made of hard wood for durability, about 450/500mm diameter and 550mm height, and is used for pounding yam, or cassava. The *Olo* is made from granite, and was found in many of the household surveyed but it is not used on a

mortar

Yam tubers

Olo

Figure 7-5: Girl using mortar and pestle, yam tubers, and the olo and omo olo (grinding stone)[75].

daily basis except for commercial catering. The olo was also in many households, though it is being overtaken by the blender and commercial grinder. It is used for grinding beans, tomatoes, peppers and onions for making sauces, which are fundamental culinary practices in Yoruba cooking.

[75] images from the website: -

Extra large cast iron pots, cauldrons and pot stands are essential for occassional ceremonial cooking, but hosting social events is a major part of Yoruba culture, and food is a major part of these events. Ceremonial cooking was done by the household, albeit with outside help, but some now hire caterers if they can afford it. Many married women used to hanker for these expensive pots and stands, but this is now less common.

Sewing machine is another object that was found in quite a few households (22 no.) even when there is no professional dressmaker in the household. This object was kept, even if rarely used and was mentioned time and time again by respondents in their object inventory.

Retail goods - food items, fabrics, fuel, tupperware, alcoholic & non-alcoholic beverages):
- the presence of retail goods in 11.8% of households surveyed, attests to the importance of trading activities in Yoruba domestic life, also described by Toyin Falola and Akanmu Adebayo (2000), Robert Smith (1969), and G.J.A.Ojo (1966) amongst others.

Portable lighting (kerosene lanterns, fluorescent bulbs, tubes & lamps, battery-powered lamps) sources are quite common because of frequent disruption of electricity supply and most households have one or more of these in addition to candles as contingency.

7.1.5.1 Location of objects: degree of extensibility and the genotypes.

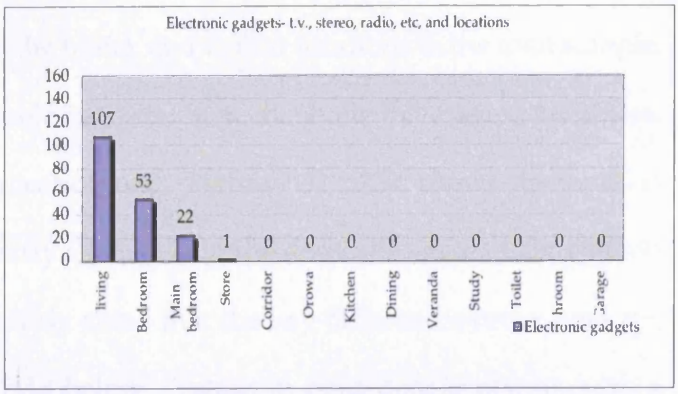
The convention of locations for objects can be read in a similar fashion to activities. Table 7-11, p223 show the wide range of extensibility, with the most extensible being unused items (junk), regular use furniture, spare furniture as might be expected, and portable water, fuel, food, fridge, iron/board, and bowls and basins, (in eight to eleven different locations), and these on average were found in least three to seven different locations in each individual floor plan.

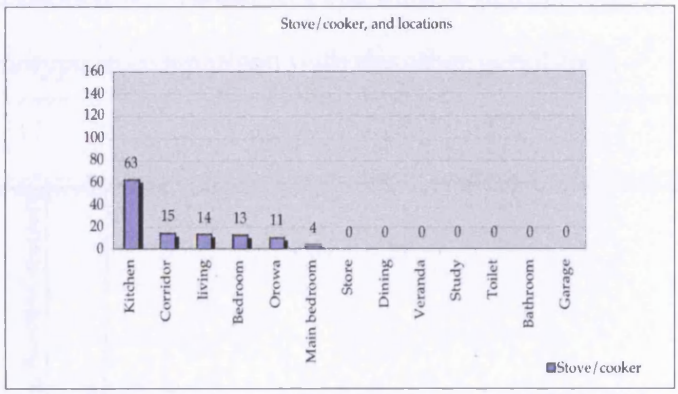
Table 7-11: Object-space matrix in total sample

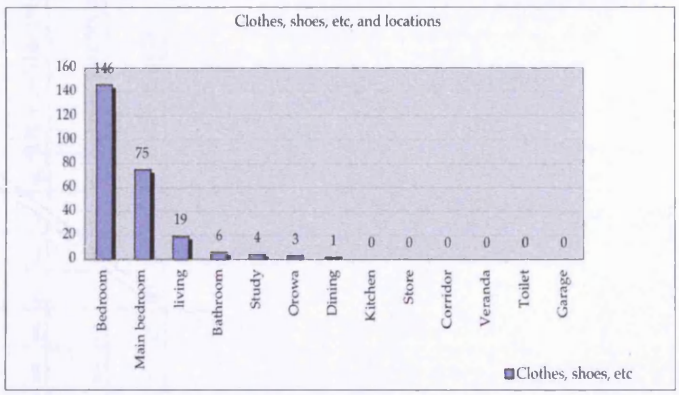
SUMMARY OF CONVENTION OF ACTIVITY LOCATIONS	total locations
Unused item	11
regular use furniture	8
Spare furniture	8
Portable water	8
Fuel	8
Food(r&c)	8
Fridge.etc	8
Iron/board	8
Bowl&basin	8
Print material	7
Crockery	7
Clothes.etc	7
Kit.appliance	7
Farm. tools	7
Xtra lge pots	7
Retail goods	7
Sto./cooker	6
Crate&carton	6
Laundry	5
Sewing mac	5
Locomotive	5
Animals	5
Elec. gadget	4
Fan	4
Bldg. material	4
Broom/vacu	4
Toiletries	4
Phone/compt	3
Alcohol/bev	3
Child items	3
Valuables	3
Port. light	2
Table covers	2
Cleaning agt	2
Gift items	2
Worship obj.	2
Medication	1
Utensils	1
Other-plants	1

Most extensible

Least extensible







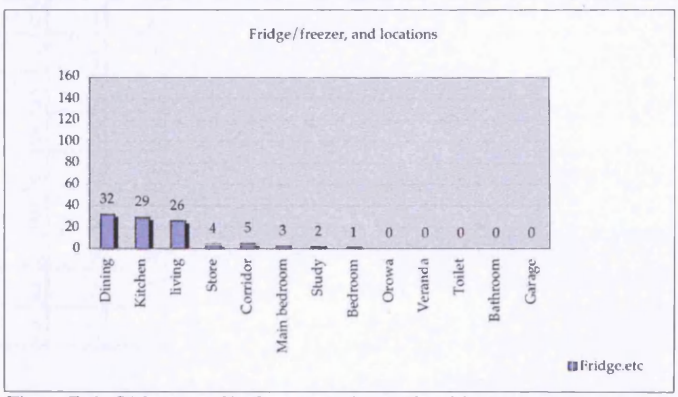


Figure7-6: Object-profile for some domestic objects

At the opposite end of the spectrum, are objects of strongly restricted extensibility, which are constrained to just one location in the home, and to four locations in the total sample. This 'class' of objects include electronic gadgets, fans, alcoholic beverages, valuables, portable lights, worship objects, medications etc. Figure 7-11 p223, shows the location profile of some key objects that are fairly extensible in the domestic space. Comparison of the various genotypes and object array show that the key differences occur with the fourteen object categories in Table 7-12 below. Values in bold denote objects with a reduced extensibility in a specific genotype in comparison with the other genotypes.

Table 7-12: Object locations and genotypes

number of locations of each object	DL-corridor (seg. Kitchen) type	SL-corridor (int. Kitchen) type	Living-room genotype	DL-corridor (int. Kitchen) type	DL-corridor (seg. Function spaces) ty	Orowa genotype	total sample
unused items	9	9	**4**	**4**	5	**4**	11
food	7	4	6	4	5	4	8
bowls & basins	5	**3**	**3**	**3**	**3**	5	8
fridge, freezers	4	3	4	4	**2**	**1**	8
iron/ironing board	**2**	**2**	**0**	**2**	**1**	**2**	8
fuel	6	5	5	4	**3**	4	8
retail goods	3	2	2	**1**	0	**1**	7
kitchen appliances	6	5	**1**	4	3	**2**	7
farming tools	3	3	**1**	**2**	**2**	3	7
print material	5	6	4	5	**3**	**3**	7
crates & cartons	**2**	6	**2**	4	0	0	6
stove/cooker	5	3	3	**1**	5	5	6
laundry	5	5	3	3	0	**1**	5
sewing machine	2	4	**1**	4	2	**1**	5
toiletries	4	4	4	**2**	3	0	4

*items in bold have a much reduced extensibility in the genotype in question.

The DL-corridor (seg. kitchen) and the SL-corridor genotypes are the most extensible based on the object categories in Table 7-12, but the Orowa genotype is the least extensible, of which six objects were found in only one/two locations. The reduced variety of the locations of many objects in the Orowa genotype is influenced by the fact that material possessions are more modest in the lower income households in this type, and also by the fact that fewer soley controlled spaces belong to the orowa households. The difference between the restricted location of iron/ironing boards in all the genotypes and its extensibility in the total sample, is because locations vary across genotypes.

Notably five of the fifteen categories in table 7-12 are related to cooking, and as explained earlier, kitchen facilities vary considerably in the genotypes[77]. The stove/cooker is less extensible in the intermediate and new genotypes, and more extensible in older and enduring genotypes. The opposite situation occurs with the fridge, which is restricted to one/two locations in the old genotypes. The variation in the location of cooking related objects across genotypes, may not be the case in a western sample.

In addition to this, there is a varying frequency with which some object categories occur- some are universally common objects in all the domestic spaces (e.g. regular use furniture, crockery, clothes, print material, food, electronic gadgets); and are 'core' to domestic life. Some of these objects are context specific despite their common ocurrence in the sample for reasons explained previously, and may not feature highly in the object inventory of a different locale e.g. portable water containers, large cooking pots, portable fan, and crates & cartons of soft drinks and beer (because the bottles are recycled in Nigeria and have monetary value). Items like building materials occur in only a few plans, but it is normal practice for people building their homes to use their current dwellings as transit storage for such items.

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[77] Cooking related objects in Table 7-12 are food, fuel, crockery, kitchen appliances, fridge & freezers.

The frequency of some objects is also dependent on income levels, for instance, there is a low occurrence of cars/motorbikes, phones, and computers, compared to what might occur in a wealthier nation, although since the study was done, there are higher numbers of households in Nigeria with home phones, although this has been outstripped by the mobile phone. Farm tools, animals for consumption, the sewing machine and retail goods are all found in a small but significant number of households across genotypes (between 10-25 percentile).

7.1.5.2 Local Spatial Characteristics

The effect of the types and range of activities and objects found in each space was manifested primarily in terms of the degree of specialisation of the space, similarly to the effect of activities, but the spaces are not affected in the same way. With regards to objects, the two bedrooms, living room, store, corridor, and orowa are non-specialised containing a wide number and variety of objects. At the other end are the garage, bathroom, and toilet, though these still contain at least five different object categories. The differences in the degree of specialisation based on the object arrays in the genotypes are summarised in Table 7-13 p227, with values in bold denoting space labels with a marked reduction in its object array in comparison with other genotypes.

The most significant changes occur in the array of objects in the main bedroom, corridor and bathroom and toilet, although overall, there is a general reduction in size of the arrayin these spaces, in the older genotypes [the DL-corridor (seg. function spaces) and the Orowa] because of the modest means of many of the households in these two types.

Table 7-13: Summary of number of objects in each space label split by genotypes

number of object categories in each location	DL-corridor (seg. Kitchen) type	SL-corridor (int. Kitchen) type	Living-room genotype	DL-corridor (int. Kitchen) type	DL-corridor (seg. Function spaces)	Orowa genotype	total sample
main bedroom	16	17	9	15	6	3**	24
bedroom	**19**	**17**	**15**	**13**	**16**	**13**	**23**
verandah	6	7	2	6	2	3	11
corridor	**17**	**15**	**15**	**10**	**6**	**11**	**20**
living room	**17**	**14**	**12**	**10**	**16**	**17**	**20**
dining room							15
bathroom	**4**	**6**	**5**	**5**	**1**	**0**	**6**
kitchen	**11**	**14**	**12**	**11**	**9**	**9**	**18**
toilet	5	5	4	3	2	0	8
store	15	15	10	13	7	12	20
study	*	9	0	5	*	*	12
garage	n/a	5	2	2	*	*	5
orowa	*	*	*	*	*	18	18
intensity of focus	bedroom	kitchen	corrdor	main bedrm and bedrm	bedroom	living room	store and kitchen

The Living-room genotype has a restricted array of objects in the bedroom, corridor, and living room and despite having access to extra function spaces, it is quite restrictive in object array size, in comparison with the SL-corridor genotype which is of similar functional size. Also the proportion of non-specialised core space labels in comparison to specialised core labels, shows that the SL-corridor genotype, and Living-room genotype have a slightly higher proportion of specialised core labels than the older genotypes with the enduring and the intermediate genotypes in-between.

7.1.6 Space Specialisation: interaction between activities and object categories

A comparison of the effect of activities and objects on space labels shows that some spaces like the garage, toilet and bathroom are very controlled (specialised) in terms of what can take place or what can be kept in them, whilst only the bedroom and to some extent the corridor, are unspecialised for both objects and activities. We will focus on the core space labels in the discussions in this section.

Table 7-14: Summary of space use (for activities and objects)

SUMMARY OF CONVENTION OF ACTIVITY LOCATIONS	Least Specialised Space (multi-functional) ← Orowa	Verand	Corridr	Bedrm	Kitchen	Living room	Dining room	Main br	Least Specialised Space (multi-functional) → Study	Bathrm	garage	Store	Toilet
total no. of activities in each space	**14**	**11**	**11**	**10**	**8**	**10**	**9**	**9**	**7**	**6**	**5**	**4**	**2**
total no. of times that each space is the most common and 2nd most common location for any object	2	4	3	8	3	6	2	2	0	3	1	2	1

SUMMARY OF CONVENTION OF OBJECT LOCATIONS	Main bedroom	Bedroom	living	Store	Corridor	Orowa	Kitchen	Dining	Veranda	Study	Toilet	Bathroom	Garage
total no. of object categories in each space	**24**	**23**	**20**	**20**	**20**	**18**	**18**	**15**	**11**	**12**	**8**	**6**	**5**
total no. of times that each space is the most common and 2nd most common location for any object	6	17	7	11	9	2	11	6	4	0	2	3	1

Summary

For Objects	For Activities
Main bedroom	Orowa
Bedroom	Veranda
living	Corridor
Store	Bedroom
Corridor	Kitchen
Orowa	Living room
Kitchen	Dining room
Dining	Main br
Veranda	Study
Study	Bathrm
Toilet	garage
Bathroom	Store
Garage	Toilet

Least Specialised space labels ↑

↓ Most Specialised space labels

At odds are the space labels that are different in terms of use (for activites) and content (for objects): (see Figure 7-7 to Figure 7-9 for examples of the activity and object array in the bedroom, living room and the kitchen). The most variation between specialisation in terms of use and content occurs in the storeroom, and to a lesser extent; the main bedroom, orowa and veranda. Although there is a connection between high integration and low specialisation/specificity of space and low integration with high specialisation/ specificity of use, the main bedroom which is relatively segregated in most,

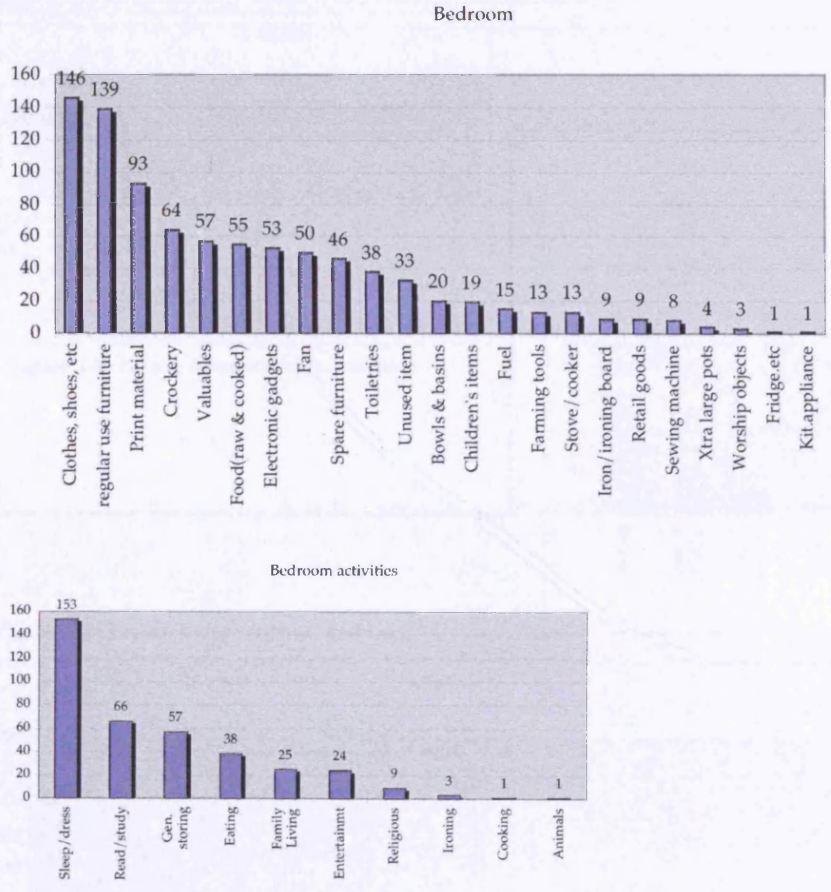
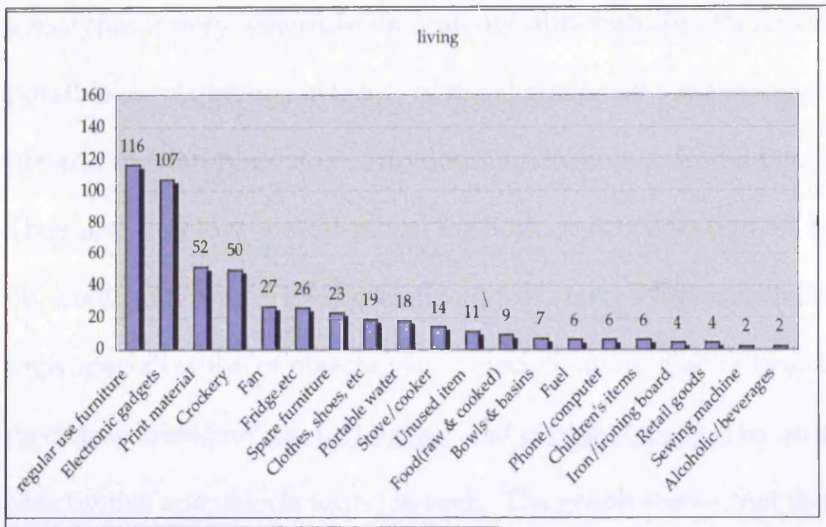


Figure 7-7: Bedroom profile for use and content



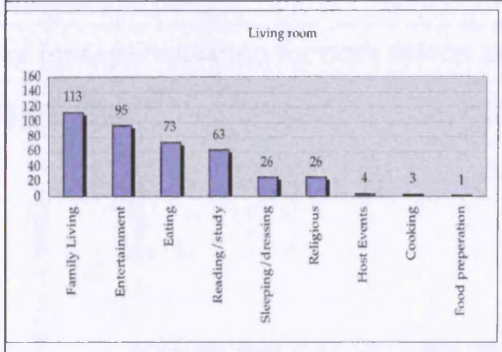


Figure 7-8: Living room contents, and uses

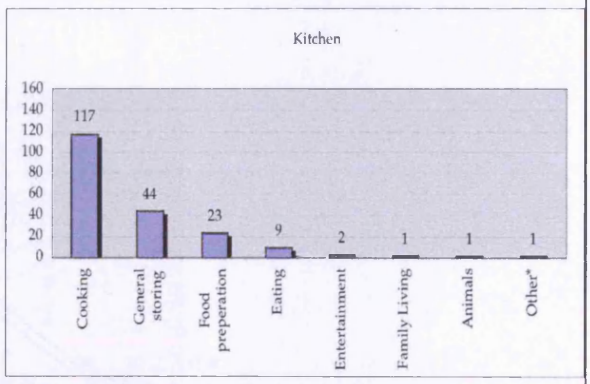
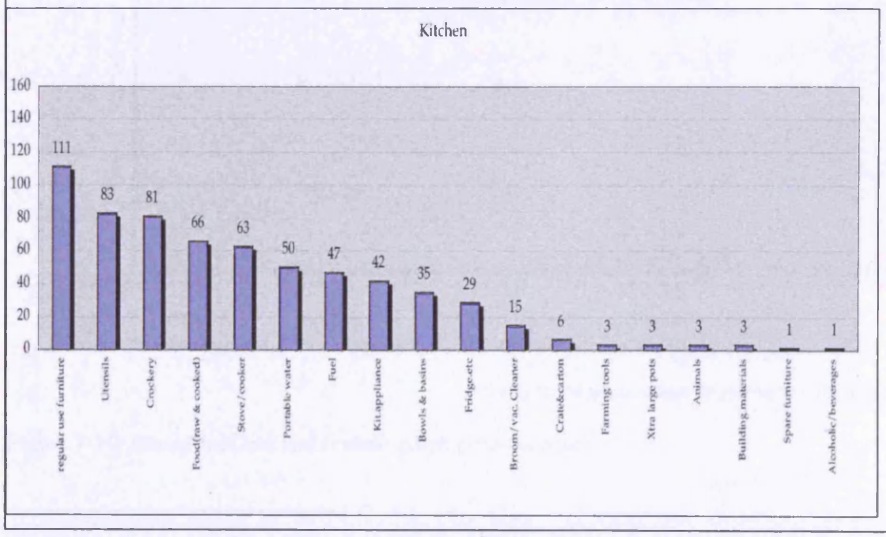


Figure 7-9: Living room contents, and uses



genotypes is very generic in its contents, although slightly less so for activities. The four possible permutations in terms of the characteristic of a space for its usage for domestic life and the paraphernalia of domesticity are shown in the Figure 7-10, p231.

They are: - a) low specialization for both objects & activities, b) high specialisation for objects & activities, c) low specialization of object + high specialization of activities and d) high specialization of objects + low specialization of activities. Each space is plotted for its characteristic for use (activities), and content (objects) by an aggregate of the number of activities and objects found in each. The graph shows that the majority of spaces were of low specialisation for both objects and activities, including the core space labels.

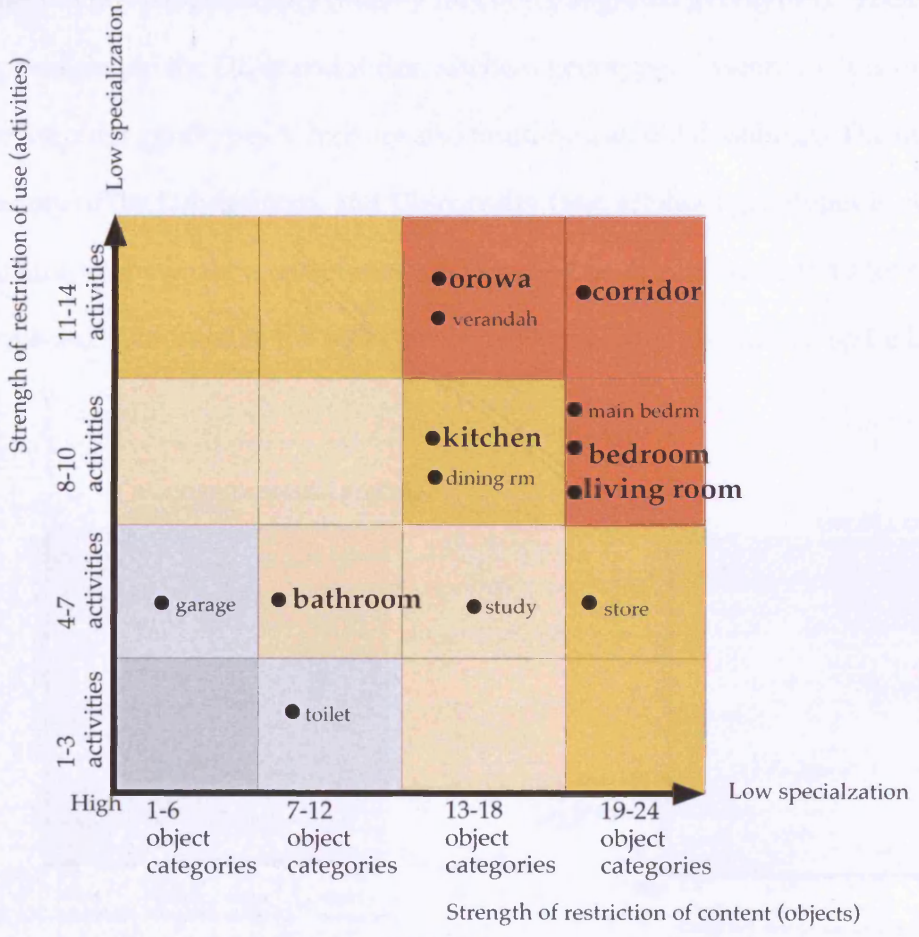


Figure 7-10: Strength of use and content graph (total sample)

The graphs for the genotypes shows that the toilet and garage are specialised (in use and content) across genotypes, that is, there are only a few activities and object arrays found in them (grey areas of the graph below). The bedroom and living room are also almost consistently non-specialised in the six genotypes, (see top right hand section of the graphs on p232-233). The kitchen is less specialised in the DL-corridor (seg. kitchen), SL-corridor, and the DL-corridor (int. kitchen) genotypes (all transition integrated types) compared to the Living-room, the DL-corridor (seg. function spaces), and the Orowa genotypes. The corridor space label is more specialised in the DL-corridor (seg. function spaces) genotype, and is less so in the Orowa type, the Living-room type, and the SL-corridor genotypes (mainly function integrated genotypes). The corridor is non-specialsied in the DL-corridor (int. kitchen) genotype. Essentially it is more specialised in the older genotypes, which are also multi-household dwellings. The more specialised nature of the Living-room, and DL-corridor (seg. kitchen) genotypes is evident, and the diagrams shows these genotypes with five and six specialised spaces (in the bottom four squares), compared to the other genotypes with 3 or 4 specialised space labels.

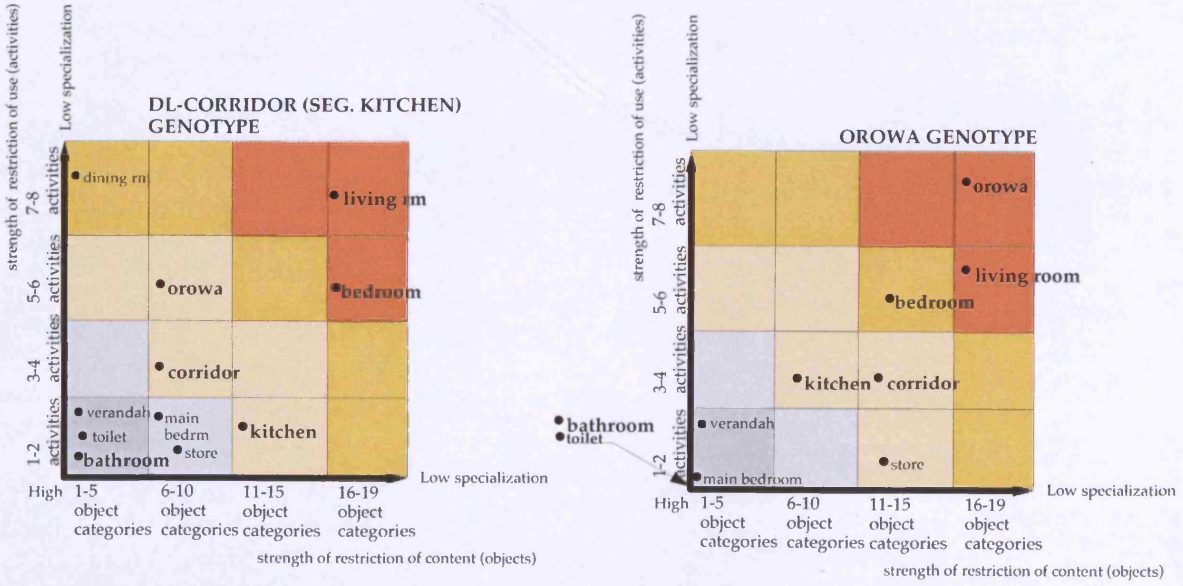


Figure 7-11: Strength of use and content in the older genotypes

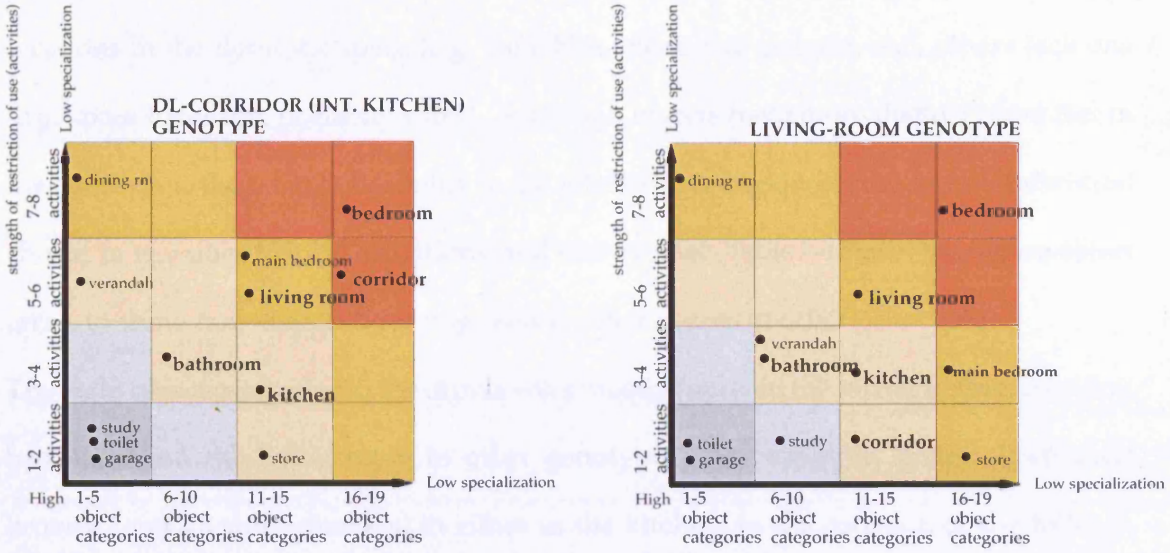


Figure 7-12: Strength of use and content in the intermediate and a new genotype

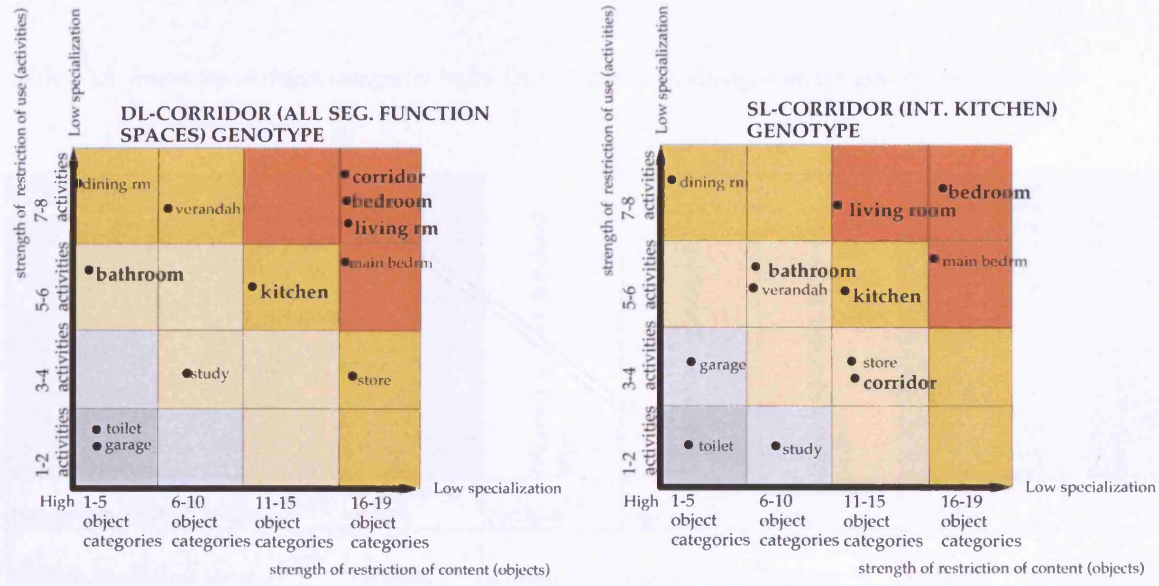


Figure 7-13: Strength of use and content in the enduring and one new genotype

Another characteristic of space use, is that whilst some objects have a couple of dominant locations in the domestic space (e.g. valuables, electronic gadgets, etc), others lack one (e.g. spare furniture, portable water). Although objects have more distinct identities in the genotypes, the relative flexibility in the total sample highlights the role of individual choice, or reactions to local conditions, and norms exist. Table 7-15 uses the orowa object array, to show how objects have migrated to other spaces in other genotypes.

The eight object categories in the orowa were mostly found in the kitchen, store, corridor, bedroom, and the living room in other genotypes. For example, people keep their brooms (and vacuum cleaners) in either in the kitchen, in the corridor, or the toilet in various genotypes. Similarly, kitchen appliances, and stoves were in the kitchen in self-contained accommodations, or in the corridor, in floor plans with shared kitchens.

Table 7-15: Trajectory of object categories in the Orowa that have changed across genotypes (and time)

most common location of the objects found in the orowa	Orowa genotype	DL-corridor (seg. Function spaces)	DL-corridor (int. Kitchen) type	Living-room genotype	SL-corridor (int. Kitchen) type	DL-corridor (seg. Kitchen) type	Number of locations in the total sample
bowls & basins	orowa	living rm & orowa	corridor	store	corridor & store	corridor	8
kitchen appliances	orowa	veranda,	kitchen	kitchen	kitchen	kitchen	7
farming tools	orowa	orowa	store	kitchen	corridor & kitchen	store	7
stove/cooker	orowa	bedrm	corridor	kitchen	kitchen	kitchen	6
laundry	orowa	*	corridor	corridor	corridor	veranda	5
broom/vacumn	orowa	*	corridor	corridor	kitchen	kitchen	4
stored water	orowa	bedroom	corridor	living room and store	bathroom	bedroom and corridor	8
spare furniture	orowa	bedroom	bedroom	bedroom	bedroom	bedroom	8

7.1.7 Intensity of Movement patterns: -

A key aspect of interest is the extent to which a space label contains superfluous objects that are unrelated to its resident activities, and are only stored there. Space labels with many superfluous objects, suggest more movement into such spaces to retrieve these objects for use elsewhere. Figure 7-14 to 7-19, p235-238 show the objects and activities found in each core space label with each activity and its related objects indicated by 'X'. Each matrix shows activities and objects that constitute at least 5% of space content/use. The break-down of the activity and object array by genotypes below each matrix, shows that while the main activities in the spaces are similar across board, the object arrays are more varied, best demonstrated by the bathroom, and living room arrays on p237.

Figure 7-14: Activity-object relationships in the corridor[78]

	OVER 5 percentile objects					
CORRIDOR	regular use furniture	Unused item	Bowl&basin	Xtra lge pots	Iron/board	Portable water
Gen. storing		x	x	x	x	x
Cooking			x			x
Family Living	x					
number of non-related objects in the space	2 of 6					
activities not involving any object in the space	1no					

The bathroom object arrays are smaller in the older genotypes, and the living room object array in the DL-corridor (int. kitchen), and the DL-corridor (seg. function spaces) genotypes contain a large number of objects that are in storage. These two genotypes have many shared accommodations.

Corridor	DL-corridor (seg. kitchen)	SL-corridor (int. kitchen)	DL-corridor (int. kitchen)	Living-room type	DL-corridor (seg. function spaces)	Orowa type
Activity in each genotype	Storage	Storage	Cooking	Storage	Storage	Storage
	cooking	ironing	storage	ironing	cooking	cooking
Objects in each genotype	Reg. furniture	Reg. furniture	Reg. furniture	Reg. furniture	Reg. furniture	Reg. furniture
	portable water	unused items	bowls & basins	unused items	portable water	xtra lge pots
	bowls & basins	laundry	portable water	portable water	unused items	portable water
	xtra lge pots	xtra lge pots	sto./cooker	children's items	sto./cooker	unused items
	children's items	basins	fuel	laundry	spare furniture	bowls & basins
	stove/cooker	spare furniture	spare furniture	fuel	animals	sto./cooker

[78] Similar graphs for the other space labels can be found in the appendix

Figure 7-15: Activity-object relationships in the living room

	over 5 percentile objects					
LIVING ROOM	regular use furniture	electronic gadgets	print material	crockery	fan	fridge etc.
Family living	x	x	x		x	
Entertainment	x	x	x	x		
Eating	x			x		x
Reading/Studying	x		x			
Sleeping/dressing	x					
number of non-related objects in the space	0 of 6					

activities not involving any object in the space n/a

Living room	DL-corridor (seg. kitchen)	SL-corridor (int. kitchen)	DL-corridor (int. kitchen)	Living-room type	DL-corridor (seg. function spaces)	Orowa type
Activity in each genotype	family living	entertainment	family living	family living	family living	family living
	entertainment	family living	eating	entertainment	entertainment	entertainment
Objects in each genotype	reg. furniture	reg. furniture	elect. gadgets	reg. furniture	reg. furniture	reg. furniture
	elect. gadgets	elect. gadgets	reg. furniture	elect. gadgets	elect. gadgets	elect. gadgets
	print material	crockery	print material	print material	water	fridge/freezer
	crockery	print material	clothes etc.	water	spare furniture	crockery
	fan	fan and fridge/freezer	crockery	spare furniture crockery and fan	sto./cooker	print material
	fridge/freezer	spare furniture	water, and spare furniture and fan	children's items fridge/freezer iron/iron bd.	clothes etc.	fan, and unused items, and bowls

Figure 7-16: Activity-object relationships in the bedroom

	over 5 percentile objects								
BEDROOM	clothes, etc.	regular use furniture	print material	crockery	valuables	food (raw & cooked)	electronic gadgets	fan	spare furniture
Sleeping/Dressing	x	x						x	x
Reading/Studying		x	x						
general Storing	x		x	x	x	x	x		x
Family living		x	x				x	x	
Entertainment							x		x
number of non-related objects in the space	0 of 6								

activities not involving any object in the space n/a

Bedroom	DL-corridor (seg. kitchen)	SL-corridor (int. kitchen)	DL-corridor (int. kitchen)	Living-room type	DL-corridor (seg. function spaces)	Orowa type
Activity in each genotype	sleep/dressing	sleep/dressing	sleep/dressing	sleep/dressing	sleep/dressing	sleep/dress
	read/study	read/study	eating	read/study	eating & storing	gen. storing
Objects in each genotype	clothes etc.	reg. furniture	clothes etc.	reg. furniture	reg. furniture	reg. furniture
	reg. furniture	clothes etc.	reg. furniture	clothes etc.	clothes etc.	clothes etc.
	print material	print material	crockery	print material	valuables	crockery
	crockery	elect. gadgets	food	spare furniture	crockery	food
	valuables	food	fan	unused items	water	spare furniture
	toiletries	unused items & spare furniture.	print material & valuables	elect. gadgets	toiletries	print material

Figure 7-17: Activity-object relationships in the kitchen

	over 5 percentile objects								
KITCHEN	regular use furniture	cooking utensils	crockery	food (raw & cooked)	stove/cooker	portable water	fuel	kitchen appliances	bowls & basins
Cooking	x	x	x	x	x	x	x	x	x
General Storing	x	x	x	x	x	x	x	x	x
Food preparation				x		x			x
number of non-related objects in the space	0 of 6								
activities not involving any object in the space	n/a								

Kitchen	DL-corridor (seg. kitchen)	SL-corridor (int. kitchen)	DL-corridor (int. kitchen)	Living-room type	DL-corridor (seg. function spaces)	Orowa type
Activity in each genotype	cooking	cooking	cooking	cooking	cooking	cooking
	gen. storing	food prep.& storing	gen. storing	gen. storing	gen. storing	food prep.& storing
Objects in each genotype	reg. furniture	reg. furniture	reg. furniture	reg. furniture	Fuel	reg. furniture
	sto/cooker	crockery	fuel	crockery	reg. furniture	spare furniture
	crockery	food	food	food	crockery	fuel
	utensils	fuel	crockery	kitchen appliance	sto/cooker	food
	food	kitchen appliance	kitchen appliance	sto/cooker	kitchen appliance	sto/cooker
	kitchen appliance	fridge/freezer	sto/cooker		fridge/freezer	animals

	over 5 percentile objects								
OROWA	regular use furniture	portable water	spare furniture	stove/cooker	kitchen appliances	bowls & basins	crockery	fuel	animals
Cooking		x		x	x	x	x	x	
Family living	x								
Reading/studying									
Food preparation		x				x			
Sleeping/Dressing	x								
Entertainment									
General Storing		x	x	x	x	x	x	x	x
Animal rearing									x
number of non-related objects in the space	0 of 6								
activities not involving any object in the space	n/a								

Figure 7-18: Activity-object relationships in the orowa

	over 5 percentile objects			
BATHROOM	Laundry	toiletries	cleaning detergents	portable water
Bathing		x		x
Laundry	x			
Toileting			x	x
number of non-related objects in the space	0 of 6			
activities not involving any object in the space	n/a			

Bathroom	DL-corridor (seg. kitchen)	SL-corridor (int. kitchen)	DL-corridor (int. kitchen)	Living-room type	DL-corridor (seg. function spaces)	Orowa type
Activity in each genotype	bathing	bathing	bathing	bathing	bathing	bathing
	toileting	laundry	laundry	laundry & toilet	n/a	entertain &religious
Objects in each genotype	clothes	clothes	clothes	clothes	clothes	N/A
	toiletries	toiletries	toiletries	toiletries		
	water	cleaning agts	cleaning agts	cleaning agts		
	cleaning agts	laundry	laundry	crates & cartons		
		water				
		crates & carton				

Figure 7-19: Activity-object relationships in the bathroom

Figure 7-8, to 7-12, reveal that each of the core space labels contains at least one superfluous objects apart from the living room, which will be retrieved for use in another space (i.e. the object is only in the space for storage purposes). But, only one of the core space labels have at least an activity that is situated in it, which requires retrieval of all its related object(s) from other spaces (corridor). Figure 7-20 below contains a summary of the number of superfluous objects in the core space labels. Five of the total of thirteen space labels having close to 50% superfluous objects, and the orowa contains one of the highest proportion of superfluous objects of the core space labels (between 40-50%).

Between 40-50% superflous objects unrelated to resident activities

OROWA	%tage of non-related objects in the space	8 of 18
	activities not involving any object in the space	n/a

Between 20-30% superflous objects unrelated to resident activities

CORRIDOR	number of non-related objects in the space	6 of 20
	activities not involving any object in the space	1no
LIVING ROOM	number of non-related objects in the space	5 of 20
	activities not involving any object in the space	n/a
BEDROOM	%tage of non-related objects in the space	6 of 23
	activities not involving any object in the space	n/a
KITCHEN	%tage of non-related objects in the space	4 of 18
	activities not involving any object in the space	n/a

less than 20% superflous objects unrelated to resident activities

BATHROOM	%tage of non-related objects in the space	n/a
	activities not involving any object in the space	n/a

Figure 7-20: Summary of superfluous activities and objects in the key space labels

The movement and retrieval process between space labels is very important in domestic space use as many space labels are heavily reliant on each other. Consequently, only a few space labels like the toilet contain a good match between its object and activity array.

7.1.8 The Intensity of focus: -

When the two most popular locations for each object are considered, we see a marked difference in the performance of each space, with the bedroom by far the most common/ second most common location for object categories (seventeen in all). The space labels used intensely for activities (bedroom, living room and veranda) were consistent across genotypes, except in the Orowa genotype where the orowa is the most intensely foccused space. A different set of spaces are used intensely for keeping objects (bedroom, store, and kitchen), though in both cases, the bedroom is the most intensely used space label. The similar intensity of focus of activities on a couple of spaces across the genotypes is contrary to what seemed instinctive, that there would be a greater intesity of focus on just one space label in genotypes of simpler functional complexity.

From these four characteristics of space, we proceed to describe other space content and space use characteristics.

7.1.9 Classification and framing of Space based on objects and activities

Classification, is defined by Bernstein (1973) as the degree of the differentiation (boundary maintenance) between the contents of object arrays in different rooms. Where there is a positive correlation between an increase in rules of exclusion, and greater differentiation between object arrays in each space label, we have strong classification. Framing refers to the extent to which objects in an array can enter into relationships with each other (e.g. whether objects can be adjacent to each other, or be in the same space label). Where there are strong frames, there are very few types of relationships, and the predictability of these types of relationship is very high. The opposite holds for weak framing. Both concepts can vary independently of each other, and of the array size.

These ideas about the activity content, and boundary strength are echoed in the concepts of *categoric differentiation and relative position* developed by Hanson (1998). In effect, they further the discussion about space specialisation. Categoric differentiation refers to 'the extent to which particular functions are assigned unambiguously to specific spaces within the home'. Spaces may be strongly associated with particular activities, and as asuch its activity use is differentiated from other spaces, often with restricted functionality. Alternatively, the opposite tends to be true for spaces with a myriad of activities.

Relative position in Hanson's (1998) sense refers to the way spaces are related to each other and to the outside world in some scheme of reference; positions about up/down, and front/back, which relate to categories of night/day and sacred/profane respectively. These orderings are usually imposed by tradition, or usage rather than individual preferences. A plus score means that strong emphasis is placed on one of these orders, hence showing little deviation across a sample or genotype, or a minus whereby no specific relations are required to hold within room arrangements or in the dwelling orientation. Both variables- differentiation and position, can be examined on the basis of inside/outside of the dwelling or within the dwelling.

Hence, the living room, bedroom, and main bedroom have very similar arrays, and are weakly classified. The living room and dining share some similarity in their arrays, and because of the presence of units with just one or two habitable rooms, the object array of living rooms are more similar to the bedroom. Figure 7-21, p242 shows object arrays in the space labels listed in order of occurrence, with the most frequent listed first.

The orowa and the kitchen also contain similar object arrays, but the orowa is more weakly classified than the kitchen containing other objects found in the living room and bedroom arrays, acting as a 'bridge' between these space labels (Figure 7-22, p243). The living room, bedroom, main-bedroom and the orowa are the most weakly classified space labels (Class A) based on their object arrays. Classification strength increases from class A to class D spaces.

Figure 7-21: Classification and framing strength in class A and Class B space labels

CLASS A Living room	CLASS A Bedroom	CLASS A Main bedroom	CLASS A Orowa	CLASS B Study	CLASS B Dining Room
regular use furniture	clothes, etc.	clothes, etc	regular use furniture	regular use furniture	regular use furniture
electronic gadgets	regular use furniture	regular use furniture	portable water	print material	fridge/freezer
print material	print material	valuables	spare furniture	spare furniture	crockery
crockery	crockery	print material	stove/cooker	iron/board	unused item
fan	valuables	fan	kitchen appliances	clothes, etc	print material
fridge/freezer	food (raw & cooked)	electronic gadgets	bowls & basins	unused items	food (raw & cooked)
spare furniture	electronic gadgets	children's items	crockery	fridge/freezer	sewing machine
clothes, etc	fan	crockery	fuel	phone/computer	alcoholic beverage
portable water	spare furniture	toiletries	animals	valuables	Iron/board
stove/cooker	toiletries	food (raw & cooked)	laundry	food (raw & cooked)	phone/computer
unused items	unused items	spare furniture	unused items	extra large pots	table covers
food (raw & cooked)	bowls & basins	sewing machine	cars/bikes	retail goods	medication
bowls & basins	children' items	unused items	clothes, etc		kitchen appliances
fuel	fuel	stove/cooker	broom/vacumm		clothes, etc
childrens items	farming tools	fridge, freezer	farming tools		portable light
phone/computer	stove/cooker	fuel	extra large pots		
retail goods	retail goods	bowls & basins	sewing machine		
iron/board	iron/board	farming tools	building material		
sewing machine	sewing machine	retail goods			
alcoholic beverage	extra large pots	iron/board			
	worship objects	kitchen appliances			
	kitchen appliances	extra large pots			
	fridge, freezer	gift items			
		worship objects			

Objects highlighted in blue are common to all the space labels in each class.
Objects underlined are common to at least 75% of the space labels in each class
NOTE: - Classification strength ranked from weakest (class A) to strongest (class D)

Figure 7-22: Classification and framing of the class C and D space labels

CLASS C kitchen	CLASS C Corridor	CLASS C Store	CLASS C Veranda	CLASS D Garage	CLASS D Toilet	CLASS D Bathroom
regular use furniture	regular use furniture	food (raw & cooked)	**spare furniture**	ars, bikes.	sanitary fittings	Laundry
cooking utensils	**Unused item**	**unused items**	laundry	rates & cartons	cleaning detergents	toiletries
rockery	**Bowl&basin**	**crockery**	crates & cartons	nused items	toiletries	cleaning detergents
ood (raw & ooked)	**extra large pots**	**fuel**	**animals**	etail goods	portable water	portable water
tove/cooker	**Iron/board**	**extra large pots**	**unused items**	nimals	unused items	clothes, etc
portable water	Portable water	kitchen appliances	**iron/board**		bowls & basins	crates & cartons
fuel	Sto./cooker	portable water	other- plants		laundry	
kitchen appliances	**Spare furniture**	crates & cartons	portable water		fuel	
bowls & basins	**Fuel**	**bowls & basins**	food (raw & cooked)		building material	
fridge, freezer	**Broom/vacumn**	**farming tools**	motorbikes/bicyles			
broom, vacumn	**Animals**	laundry				
crates & cartons	Crate&carton	**fridge, freezer**				
farming tools	Food(r&c)	gift items				
extra large pots	Print material	portable light				
animals	Fan	table covers				
building materials	**Fridge/freezer**	print material				
spare furniture	**Crockery**	**iron/board**				
alcoholic beverage	**Farming tools**	electronic gadgets				
	motorbikes/bicycles	building materials				
	Retail goods	**brooms/vacumm**				

Objects highlighted in blue are common to all the space labels in each class.
Objects underlined are common to at least 75% of the space labels in each class
NOTE: - Classification strength ranked from weakest (class A) to strongest (class D)

Objects found in all the spaces in a given class are in blue, and those in three quarters of the class are underlined. At the other end (class D) are the bathroom and toilet, which are the most strongly classified, though even these, contain objects found in other spaces labels. The dining room is similar to the study as most of its objects occur in other class A spaces, but a few of its objects are peculiar to the space, therefore both the study and dining are in class B.

The store and the corridor bear some similarity to the kitchen with at least nine of the object categories in both space labels occurring in the kitchen. The store and corridor are relatively weakly classified and bear some similarities to the kitchen in the DL-corridor

(seg. kitchen) and the DL-corridor (seg function spaces) genotypes, to the living room or orowa in the Orowa genotype, and are more strongly classified in the newer genotypes. Finally the garage contains a smaller range of object categories, some of which are to be found in other spaces, nonetheless, it has a peculiar combination of objects, and are quite classified, because it is the enclosed space for parking cars, hence it is in class D. All the key space labels apart from the bathroom are weakly classified.

With regards to framing, objects with wide extensibility, that can be found in a lot of different space labels are more likely to have a varied number of objects that they enter into relationships with, since they are with slightly different sets of objects in each location. The opposite is also likely to hold, where an object is restricted to one or two locations with other objects of similar limited extensibility, the faming of these objects are more likely to be strong, and in similar relationships across genotypes.

Figure 7-23, p245 shows all of the space labels from the weakest framed space labels (corridor, store, living room and the two bedrooms types) to the strongest framed spaces (garage, bathroom, toilet, veranda, and study). The strength of the frame were categorised based on how many of the objects in each space label are specifically cooking-related objects (typically found in the kitchen or orowa), and/or entertainment-related objects (typically found in the living room). The presence of cooking-related objects in other space labels suggests a weakening of the demarcation between food/cooking related objects and other objects, whilst the opposite holds true, particularly when combined with objects that are peculiar to the space label in question. Space labels that contain at least 75% of objects also found in the kitchen, are considered the most weakly framed, and the most strongly framed spaces are those that contain less than 25% of cooking-related objects. Whilst the results in Figure 7-23 is based on the total sample, the living room, and bedrooms in the newer genotypes are more strongly framed, because they contain fewer cooking-related objects.

Figure 7-23: Framing in space labels in the genotypes

Study	Dining Room	Living room	Bedroom	Main bedroom	Orowa	kitchen	Corridor	Store	Veranda	Toilet	Garage	Bathroom
regular use furniture	regular use furniture	regular use furniture	clothes, etc.	clothes, etc	regular use furniture	regular use furniture	regular use furniture	food (raw & cooked)	spare furniture	sanitary fittings	CARS, bikes.	Laundry
print material	fridge/freezer	electronic gadgets	regular use furniture	regular use furniture	portable water	cooking utensils	Unused item	unused items	laundry	cleaning detergents	crates & cartons	toiletries
spare furniture	crockery	print material	print material	valuables	spare furniture	crockery	Bowl&basin	crockery	crates & cartons	toiletries	unused items	cleaning detergents
iron/board	unused item	crockery	crockery	print material	stove / cooker	food (raw & cooked)	extra large pots	fuel	animals	portable water	retail goods	portable water
clothes, etc	print material	fan	valuables	fan	kitchen appliances	stove/cooker	Iron/board	extra large pots	unused items	unused items	animals	clothes, etc
unused items	food (raw & cooked)	fridge etc.	food (raw & cooked)	electronic gadgets	bowls & basins	portable water	Portable water	kitchen appliances	iron/board	bowls & basins		crates & cartons
fridge/freezer	sewing machine	spare furniture	electronic gadgets	children's items	crockery	fuel	Sto./cooker	portable water	other- plants	laundry		
phone/computer	alcoholic beverage	clothes, etc	fan	crockery	fuel	kitchen appliances	Spare furniture	crates & cartons	portable water	fuel		
valuables	Iron/board	portable water	spare furniture	toiletries	animals	bowls & basins	Fuel	bowls & basins	food (raw & cooked)	building material		
food (raw & cooked)	phone/computer	stove/cooker	toiletries	food (raw & cooked)	laundry	fridge, freezer	Broom/vacu	farming tools	motorbikes/bicyles			
extra large pots	table covers	unused items	unused items	spare furniture	unused items	broom, vacumm	Animals	laundry				
retail goods	medication	food (raw & cooked)	bowls & basins	sewing machine	cars/bikes	crates & cartons	Crate&carton	fridge, freezer				
	kitchen appliances	bowls & basins	children' items	unused items	clothes, etc	farming tools	Food(r&c)	gift items				
	clothes, etc	fuel	fuel	stove/cooker	broom/vacumm	extra large pots	Print material	portable light				
	portable light	childrens items	farming tools	fridge, freezer	farming tools	animals	Fan	table covers				
		phone/computer	stove/cooker	fuel	extra large pots	building materials	Fridge.etc	print material				
		retail goods	retail goods	bowls & basins	sewing machine	spare furniture	Crockery	iron/board				
		iron/board	iron/board	farming tools	building material	alcoholic beverage	Farming tools	electronic gadgets				
		sewing machine	sewing machine	retail goods			motorbikes/bicycles	building materials				
		alcoholic beverage	extra large pots	iron/board			Retail goods	brooms/vacumm				
			worship objects	kitchen appliances								
			kitchen appliances	extra large pots								
			fridge, freezer	gift items								
				worship objects								

Entertainment-related Objects

Cooking-related Objects

Objects peculiar to each space

no of the nine cooking related objects found in each space	2 of 9	4 of 9	7 of 9	6 of 9	7 of 9	6 of 9		8 of 9	7 of 9	2 of 9	3 of 9	0 of 9	1 of 9

NOTE: - THE OBJECT INVENTORY IN EACH SPACE LABEL ARE ARRANGED IN FROM THE MOST FREQUENTLY OCCURING TO THE LEAST OCCURING IN THE SPACE

In terms of relative positioning, the main distinction between the arrangement of spaces in the house plans is the front-back distinction which roughly corresponds to a distinction between clean, dry spaces (front) and spaces with a lot of waste- grey water, food debris, human waste, which are often but not always relegated to the rear of the building/plot. Spatially, external spaces were an important part of traditional Yoruba domestic architecture for storage, and this continues in the sample albeit with varying intensity of use, with over seventy households who use the outdoors for storage for keeping animals, junk, extra large cooking pots, utensils (mortars & pestle) etc, and similar numbers who use outdoors (or balconies) for laundry.

The DL-corridor (seg. kitchen), SL-corridor, and the DL-corridor (seg. function spaces) genotypes have a generic similarity in the activity arrays of the living room, dining and bedroom (negative categoric differentiation), but maintaining a difference to the toilet, bathroom and kitchen. These genotypes have a positive relative positioning (that is, a clear front and back distinction). The DL-corridor (int kitchen), and the Living-room genotypes have a positive categoric differentiation and relative positioning, while the Orowa genotype has both negative differentiation and positioning, that is, the distinction between the activity array and its front-back orientation is not very strong. One house's backyard can be oriented to the front of another although within the plan, there is a generic idea of the back, which is where the toilet and bathroom are located.

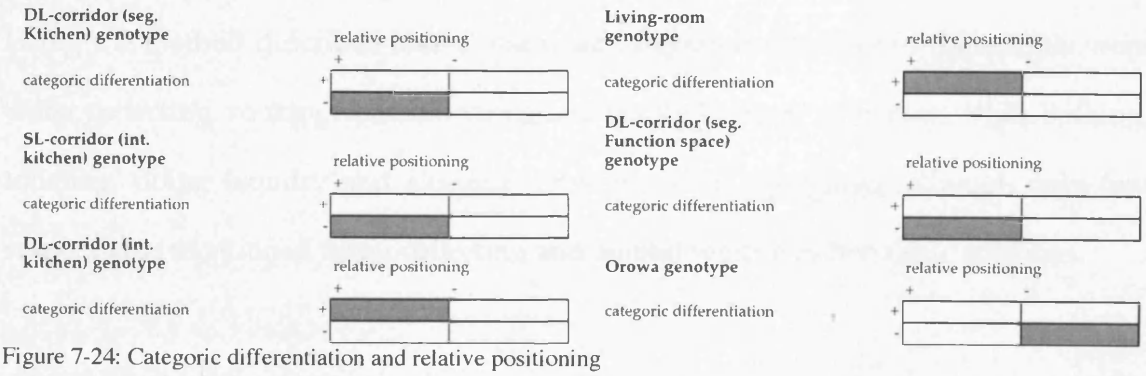


Figure 7-24: Categoric differentiation and relative positioning

7.1.10 Objects and Activities and syntactic positioning

All the domestic activities were ranked in terms of their depth and integration values, as described by Monteiro (1997), to see if the banding of activities in their integration and depth, based on her classificatory system, is present in this sample. Her classification expands on the distinction between individual, household-based or communal (involving visitors) activities by subdividing these categories further into a) household chores, b) extended chores, c) passive leisure, d) interactive leisure, e) private needs, and f) communal needs, thereby incorporating the work and leisure identity. Household chores refer to domestic work geared towards maintaining the home, and usually involves several members of the households. Extended chores refer to those chores that involve the outdoors or non-inhabitants, passive leisure can involve several household members but are sedentary in nature, while interactive leisure refers to pleasurable activities that involve non-inhabitants as a rule. Private needs and communal needs are either individualistic or can involve the household together. Integration and depth values of all the locations where each activity/objects occurred in each household were averaged, rather than choosing one set of integration/depth values.

7.1.10.1 Integration of Activities

Using the method described above, the most integrated activities in the sample were water collecting, cooking, animal rearing and family living & relaxation, while bathing, toileting, doing laundry and sleeping/dressing were segregated, athough only few respondents mentioned water collecting and animal rearing as bona-fide activities.

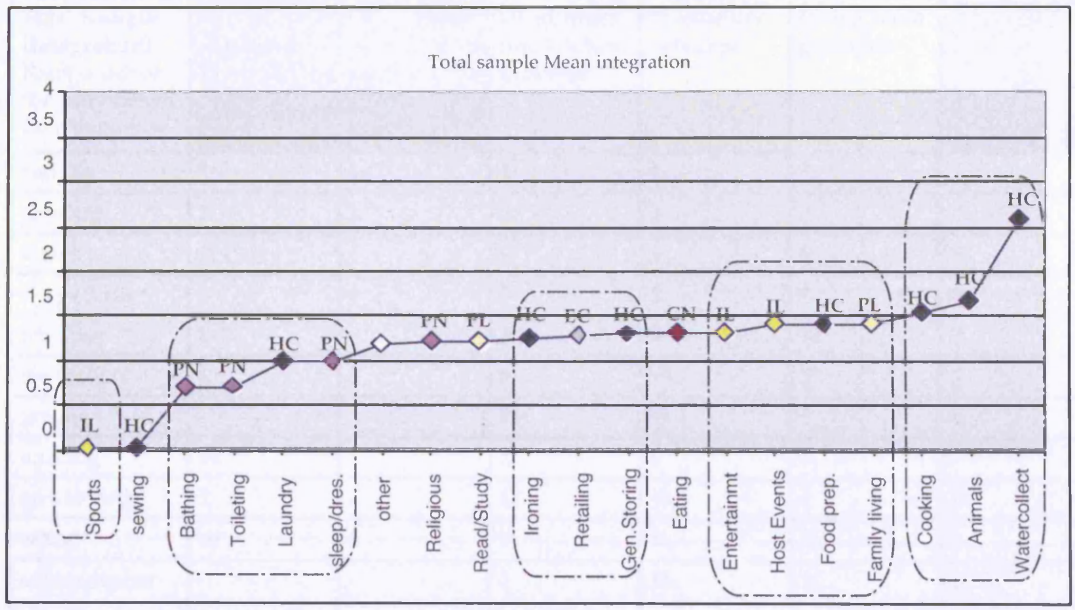


Figure 7-25: Mean integration of domestic activities

There was some banding effect in the integration pattern though not as distinct as Monteiro (1991). Private needs (PN) being quite segregated, apart from eating, which is a communal need and hence is less segregated, and leisure focussed activities (PL and IL) being quite integrated. Household chores (HC) were split with cooking, animal rearing being integrated, ironing, retailing and storing being relatively segregated and laundry and sewing being very segregated in the total sample. There are variations in the most integrating activities across genotypes with animal rearing and retailing being highly integrated activities in the Orowa genotype (due to their location in the orowa), and the DL-corridor (seg. function spaces) genotype respectively. Cooking is better integrated in the genotypes commonly used by lower income, and low educational level households in shared accommodations (Orowa, and the DL-corridor (seg. function spaces) genotypes), because it was mainly located in the orowa/corridor instead of the kitchen. The only exemption are some examples of the enduring genotype {DL-corridor (seg.kitchen)}. Table 7-16, p249, is listed from the most segregated to the most integrated activity in each genotype).

Total Sample (integration) Rank order of the activities in each genotype	Orowa genotype	DL-corridor (seg. function spaces) genotype	DL-corridor (int. kitchen) genotype	SL-corridor genotype	Living room genotype	DL-corridor (seg. kitchen) genotype
bathing	1	1	4	2	1	2
toileting	2	2	7	1	3	1
laundry	11	-	6	3	4	12
sleep/dress	3	4	3	5	5	5
religious	8	-	5	9	14	8
read/study	6	3	8	10	11	6
ironing	-	-	14	15	7	4
retailing	14	-	11	4	2	7
gen. storing	5	7	12	16	6	10
eating	10	5	9	11	13	9
entertainment	-	-	2	14	15	11
host events	4	-	-	17	10	-
food prep.	**12**	**9**	**1**	**8**	**9**	**3**
family living	9	6	10	12	12	13
cooking	**13**	**8**	**13**	**7**	**8**	**14**
animal rearing	7	-	-	6	-	15
watercollecting	-	-	-	18	-	-

Table 7-16: Ranking of mean integration of activities in each genotype

Note: table is listed and ranked from least integrated to most integrated (from rank 1 upwards).

There was minimal difference in the integration values of sequential activities that are ususally in the same space, like cooking and food preparation, except in the Orowa, DL-corridor (seg. kitchen), and the DL-corridor (int. kitchen) genotypes, where cooking mostly took places in the integrated corridor/orowa, and food preparation takes palce outside/varanda. There is more similarity at the segregated end due to consistency of location: - toileting, bathing, and sleeping/dressing are consistently segregated. Hosting social events was relatively integrated in the newer genotypes (SL-corridor, and Living room types), because it is often held in the living toom, but relatively segregated in the Orowa genotype, where it is often held outdoors. For many households, social events takes place outdoors/living room, reflecting the integration values of these spaces.

7.1.10.2 Depth patterns of Activities

The banding pattern also occurs with the mean step depth. Private needs tend to be deep within the domestic space, and leisure focussed activities are very shallow, or a bit deeper in the dwelling as is the case with family living and relaxation and guest entertainment. Household chores on the other hand are relatively shallow, but with a few chores that are quite deep in the dwelling, such as, laundry which often takes place in the bathroom, and ironing (often in the bedrooms).

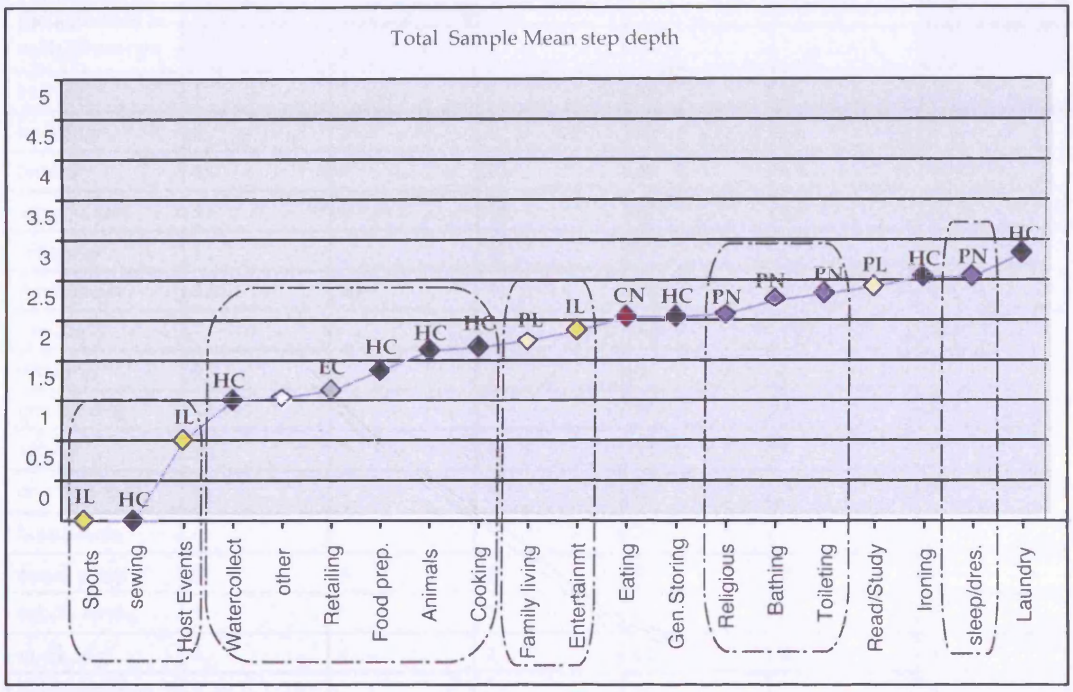


Figure 7-26: Mean step depth for activities

Only a few activities were consistent across the genotypes – sleeping & dressing are deep, while guest entertainment, and retailing, are shallow in the genotypes. Family living & relaxation and eating are relatively deep (see Table 7-17, p251). The main increase in depth for the other activities was mainly from the older genotypes, to the newer ones, or more precisely from the shared accommodation to self-contained genotypes.

For instance toileting and bathing are shallow in the older and intermediate genotypes because they are directly accessed from the exterior, deep in the enduring genotype that contains more tenement types, and very deep in the newer genotypes. Activities such as food preparation and cooking are less than 1 step depth apart in the older gentoypes, but are at least 1 step depth or more apart in the intermediate [DL-corridor (integrated kitchen)] and newer (the SL-corridor, and the Living-room) genotypes.

Table 7-17: Depth pattern of activities in the genotypes.

Total Sample (depth) Rank order of the activities in each genotype	Orowa genotype	DL-corridor (seg. function spaces) genotype	DL-corridor (int. kitchen) genotype	SL-corridor genotype	Living room genotype	DL-corridor (seg. kitchen) genotype
bathing	1	1	1	17	14	10
toileting	2	2	4	18	11	6
laundry	4	-	13	16	12	11
sleep/dress	13	9	14	14	13	12
religious	7	-	11	8	7	16
read/study	11	10	12	12	9	13
ironing	-	-	7	10	10	15
retailing	3	-	3	4	1	1
gen. storing	12	5	5	13	8	8
eating	10	8	10	19	4	9
entertainment	14	-	9	7	3	7
host events	4	-	-	1	-	-
food prep.	**8**	**3**	**1**	**5**	**2**	**4**
family living	9	6	6	6	6	5
cooking	**6**	**4**	**2**	**11**	**5**	**2**
animal rearing	5	-	-	15	-	3
watercollecting	-	-	-	2	-	-

Note: the table is ranked from the shallowest to the deepest (from 1 upwards) in each genotype

7.1.10.3 Integration pattern of objects

The objects were also given an integration value based on the space label where the objects were found. Objects related to three activities (cooking, family living and relaxation, and bathing) were mapped onto the integration profile in Figure 7-27, p252 to demonstrate the

extent of movement involved. Cooking-related objects in particular show this quite well with food and crockery being segregated, and the stove, fuel and kitchen appliances are less segregated. This is because they are often kept in different spaces (kitchen, store, bedroom, corridor), although in many instances, cooking related objects are kept in the same space label. There is more depth separation between cooking related objects in shared accommodationsbecause they are usually kept in different spaces, including the bedroom for obvious reasons.

Table 7-18, p253 shows that for the total sample 1) portable lights (kerosene lamps), 2) cleaning agents (bleaches, detergents, toilet brushes etc), 3) table covers, 4) gift items from friends and loved ones, 5) toiletries surplus, 6) wet laundry, 7) plants, 8) clothes, 9) valuables (money, jewellery), 10) food, and 11) religious worship objects are very segregated [The table is arranged from most segregated to less segregated]. Seven of the eleven most segregated objects are also very restricted in their extensibility apart from food and personal effects (clothes, shoes, etc). These objects are mainly in the store, and bathroom which are segregated, strongly classified and framed, in the kitchen which is similarly classified and framed, but less segregated, and the bedroom which is less classified and framed, but segregated.

The effect of varying integration values of the same space label across the genotypes on an object which is consistently located in the same space label, is demonstrated by the positioning of valuables in Table 7-18 p254. The integration values for valuables were similar across genotypes, but it is more segregated in the SL-corridor, the DL-corridor (int. kitchen), the Living-room, and the Orowa genotypes, and less so in the DL-corridor (seg. kitchen), and the DL-corridor (seg. function spaces) genotypes. Six of the ten most segregated objects are consistently placed in at least four genotypes - cleaning agents, toiletries, laundry, personal effects (clothes, shoes etc), food, and valuables.

Figure 7-27: Mean integration for objects

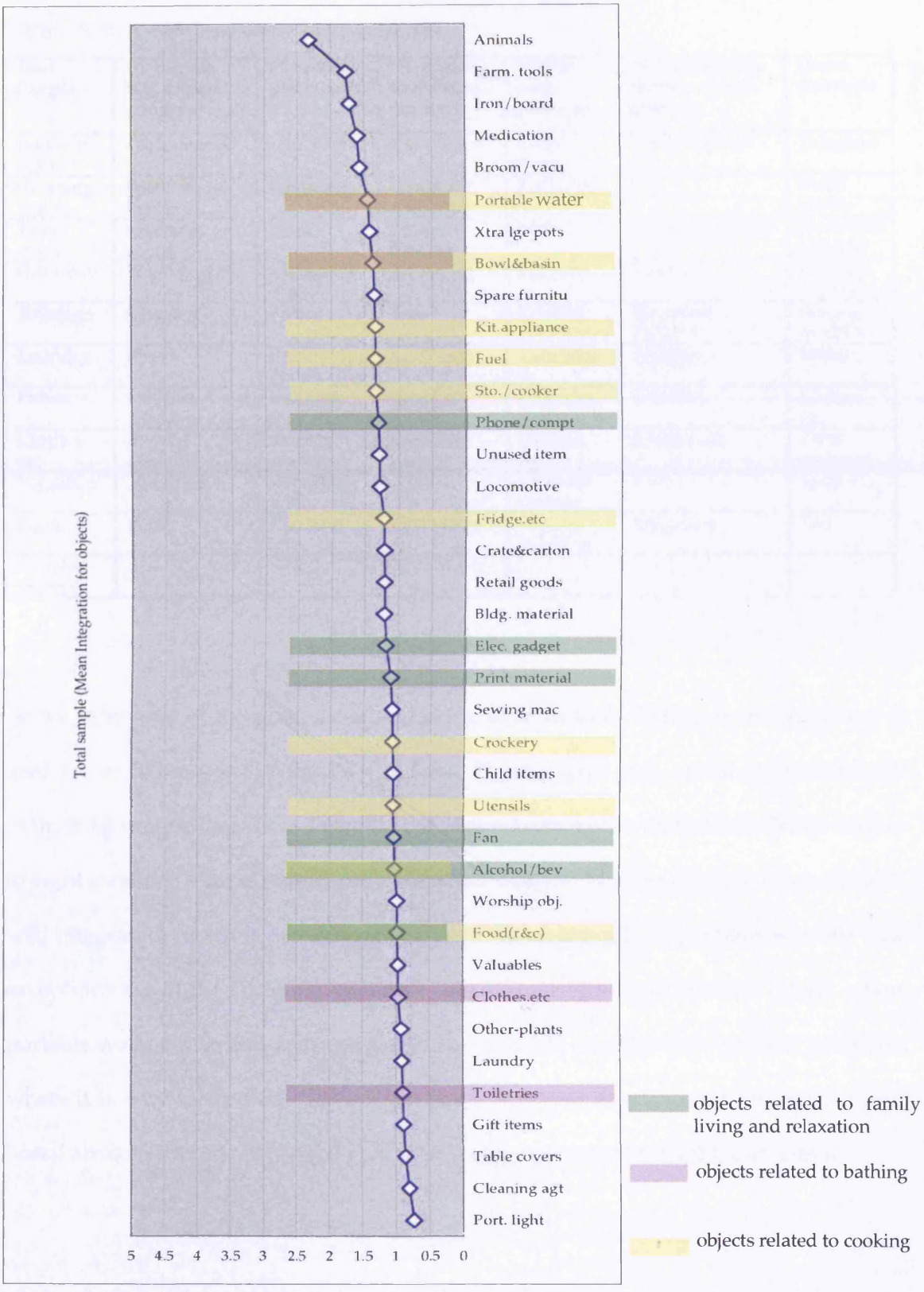


Table 7-18: Most segregated objects in the genotypes

Total Sample	DL-corridor (seg. kitchen) genotype	SL-corridor genotype	DL-corridor (int kitchen) genotype	Living-room genotype	DL-corridor (seg. function spaces) genotype	Orowa Genotype
Portable lights	Table covers	Clothes etc	Cars/bikes	Cars/ bikes	Print materials	Valuables
Cleaning agents	Portable lights	Valuables	Electronic gadgets	Toiletries	Fan	Retail goods
Table covers	Cleaning agents	Food	Fridge / freezer	Fuel	Cleaning agents	Electronic gadgets
Gift items	Retail goods	Children's items	Valuables	Laundry	Laundry	Worship objects
Toiletries	Laundry	Plants	Fan	Kitchen appliances	Electronic gadgets	Sewing machine
Laundry	Plants	Retail goods	Clothes etc	Valuables	Toiletries	Fridge
Plants	Utensils	Building materials	Crockery	Cleaning agents	Crockery	Clothes etc
Clothes etc	Sewing machine	Sewing machine	Cleaning agents	Clothes etc	Clothes etc	Print material
Valuables	Toiletries	Portable water	Food	Crates& cartons	Fuel	Food
Food	Food	Crockery	Farm tools	Sewing machine	Valuables	Fan
Worship objects						

At the other end of the scale, 1) animal stock, 2) farm tools, 3) iron & ironing board 4) medication, 5) brooms 6) portable water, and 7) extra large pots, are strongly integrated in the total sample (see Table 7-19 p255). These objects have a wide extensibility- in four to eight locations – for example, portable water was found in eight space labels, is quite well integrated, which is perhaps indicative of its central role in such households. The exceptions are in the enduring genotype [the DL-corridor (seg. kitchen) type)], where portable water containers are segregated, and in th DL-corridor (int. kitchen) genotype, where it is very integrated. Table 7-19 shows that only animals, and the iron/ironing board are consistently integrated in at least four genotypes (highlighted in grey).

Table 7-19: Summary of most integrated objects in the genotypes

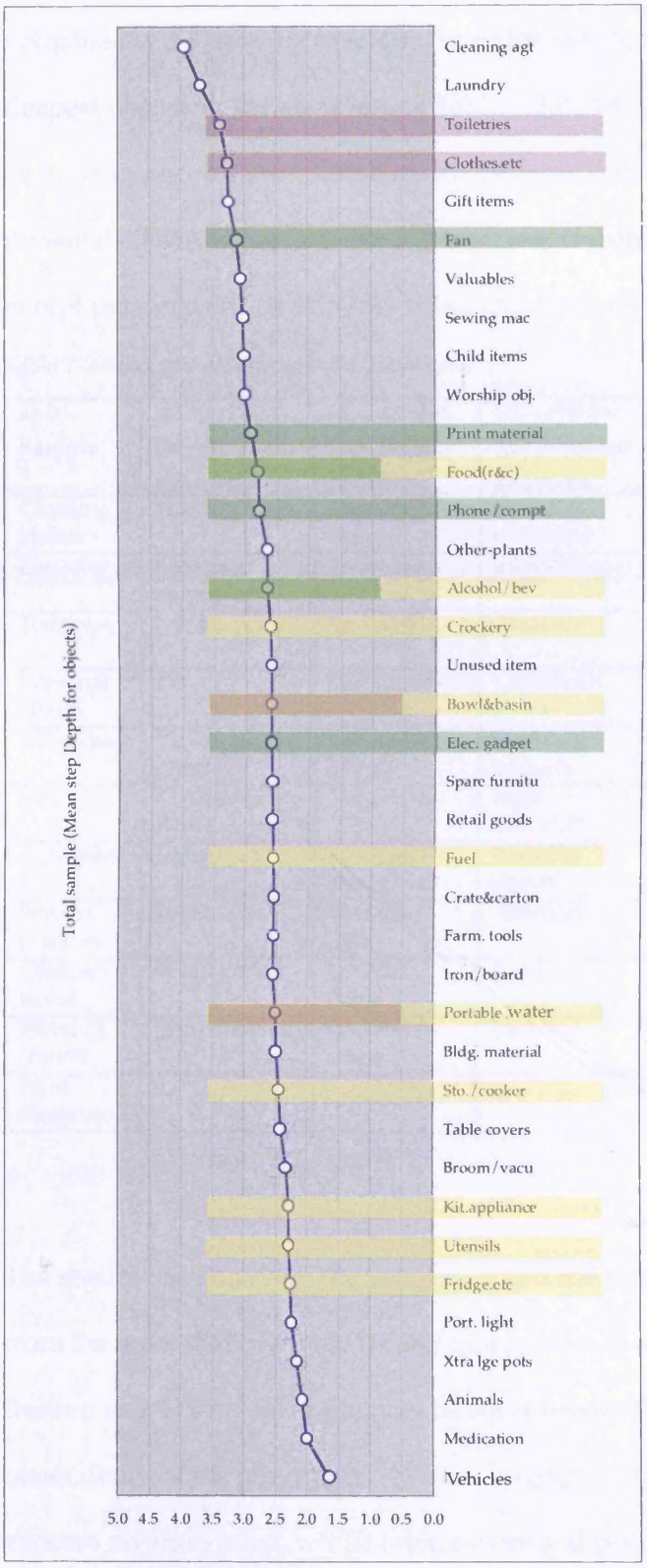
Total Sample	DL-corridor (seg. kitchen) genotype	SL-corridor genotype	DL-corridor (int kitchen) genotype	Living-room genotype	DL-corridor (seg. function spaces) genotype	Orowa Genotype
Animals	Animals	Iron/board	Retail goods	Brooms/ vaccum	Animals	Farm tools
Farm tools	Iron/board	Brooms / vaccum	Water	Phone / computer	stove	Kitchen appliances
Iron/board	Bldg materials	Farm tools	Sewing machine	Medication	Kitchen appliances	Laundry
Medication	Bowls & basins	Animals	Medication	Electronic gadgets	Water	Motorbike / cycles
Brooms/ vac	Crates& cartons	Fridge	Iron/board	Retail goods	Iron/board	Brooms / vaccum
Water	Motorbikes / cars	Large pots	Fuel	Fridge	Unused items	Animals
Large pots	Phone	Bowls & basins	Stove / cooker	crockery	Spare furniture	Unused items

A couple of objects are inconsistent across genotypes: - Fuel is quite well integrated in the DL-corridor (int. kitchen) genotype, but segregated in the Living-room, and the DL-corridor (seg. function spaces) genotype reflecting differences in location, and the integration value of the location. Similarly, farm tools are integrated in the SL-corridor, and Orowa genotypes, but segregated in the DL-corridor (int. kitchen) genotype.

7.1.10.4 Depth Patterns of Objects

The depth patterns were reasonably consistent for about half of the inventory. Objects related to cooking are also spread out depth-wise, but less deep in comparison to objects related to family living and relaxation. The spread in step depth was most pronounced with bathing-related objects, particularly in genotypes dominated by shared accommodation dwellings. It is not secure to leave things in a shared bathroom which is also sometimes detached from the main dwelling (see Figure 7-21 on p 256).

Figure 7-28: Mean depth for objects



1) cleaning agents 2) laundry, 3) toiletries 4) personal effects 5) gift items 6) fan, 7) valuables and 8) sewing machine, 9) children's items and 10) worship objects. were the deepest objects in the sample (see Table 7-20). Most of these are also segregated. Eight of these categories are consistent across genotypes (cleaning agents, laundry, toiletries, personal effects, valuables, sewing machine, children's items and print material), and all except personal effects (clothes, shoes etc) have a limited extensibility.

Table 7-20: Deepest objects split by genotypes

Total Sample	**DL-corridor (seg. kitchen) genotype**	**SL-corridor (int. kitchen) genotype**	**DL-corridor (int. kitchen) genotype**	**Living-rm genotype**	**DL-corridor (seg. function spaces) genotype**	**Orowa Genotype**
Cleaning agents	Plants	Cleaning agent	Phone / computer	Toiletries	Brooms / vaccum	Personal effects
Laundry	Cleaning agents	Toiletries	motorbikes	Laundry	Fan	Valuables
Toiletries	Laundry	Laundry	Farm tools	Personal effects	Personal effects	Crockery
Personal effects	Fan	Gift items	Children's items	Cleaning agents	Children's items	Electronic gadgets
Gift items	Personal effects	Personal effects	Electrical gadgets	Fan	Print materials	Food
Fan	Children's items	Valuables	Print materials	Valuables	Valuables	Bowls & basins
Valuables	Valuables	Sewing machines	Personal effects	Children's items	Electronic gadgets	Print materials
Sewing machine	Toiletries	Portable light	Toiletries	Sewing machine	Iron/board	Sewing machines
Children's items	Retail goods	Unused items	Food	Print materials	Crockery	Fuel
Worship objects	Print material	Children's items	Laundry	Spare furniture	food	Retail goods
Print materials						

The shallowest objects in the genotypes and the total sample are in Table 7-21, arranged from the most shallow, with 1) cars/motorbikes, 2) animals, 3) extra large pots, 4) fridge/freezer, and 5) kitchen appliances being consistently shallow, despite differences in the mean depth of the genotypes. 1) extra large pots, 2) animals, 3) medication, 4) brooms/vaccum are integrated, whilst table covers and portable lights are segregated.

Table 7-21: shallowest objects split by genotypes

Total Sample	DL-corridor (seg. kitchen) genotype	SL-corridor (int. kitchen) genotype	DL-corridor (int. kitchen) genotype	Living-rm genotype	DL-corridor (seg. function spaces) genotype	Orowa Genotype
Cars / motorbikes	Table covers	Building materials	Alchohol beverages	Medication	Cleaning agents	Iron/board
Medication	Gift items	Cars/bikes	Medication	Cars/bikes	Laundry	Farm tools
Animals	Cars / motorbikes	Plants	Kitchen appliances	Phone / computer	Animals	Plants
Xtra large pots	Portable lights	Brooms / vaccum	Broom/ vaccum	Retail goods	Kitchen utensils	Kitchen appliances
Portable lights	Phone / computer	Medication	Retail goods	Animals	Kitchen appliances	Broom / vaccum
Fridge / freezer	Building materials	Table covers	Kitchen utensils	Crockery	Spare furniture	Cars / motorbikes
Kitchen utensils	Animals	Retail goods	Portable water	Fridge / freezer	Portable water	Spare furniture
Kitchen appliances	Fridge / freezer	Fridge / freezers	Fuel	Alchohol beverages	Fuel	Xtra large pots
Brooms / vaccum	Xtra large pots	Iron/board	Fridge / freezers	Electronic gadgets	Stove / cooker	Alchohol beverages
Table covers	Kitchen utensils	Crates & cartons	Iron/board	Xtra large pots	Unused items	Children's items

Note: - Consistent objects are highlighted in orange

Objects related to cooking are relatively segregated and deep, but valuables were relatively shallow in the DL-corridor (int. kitchen) genotype, despite the fact that it is one of the deepest genotypes, because valuables are kept in relatively shallow bedrooms.

Effect on Intensity of Movement: - Variations in locations of objects related to cooking, family living and bathing, is also obvious in individual plans, and show the amount of movement involved in each activity in the use and retrieval process. The predominantly shared genotypes involve more movement, although to-and-fro movement between space labels is a generic phenomenom in the domestic spaces surveyed. Examples of the locations of objects in each plan (object maps) in p260 to 265 shows the location of all objects related to cooking, family living & relaxation and bathing, in relation to where these activities take place in each dwelling .

The three basic activities (household relaxation, cooking and bathing), and the location of their related objects are mapped on to the floor plans overleaf, to demonstrate this issue of movement around the domestic space and how this is partly a consequence of differences in configuration. The number of steps/depth between the location(s) of the specified activity, and its related objects are indicated for each floor plan and also the integration range is also shown for the space labels implicated in each activity. What these reveal is that there were more rooted activities in the SL-corridor and the Living-room genotypes, and less step depth between the activity and the locations of the related objects in these households, that is, there is better congruence between activity and related object locations. The older genotypes, enduring genotype, and the 'intermediate' genotypes had more steps separating the activities and their related objects in each floor plan. The distance between family living and relaxation and its related objects, is the least in these genotypes, followed by cooking with least 2 steps between the activity and all its paraphernalia, and showering involves the most movement/step depth between activity and objects.

The exact opposite happens with the newer genotypes [SL-corridor and the Living-room genotypes], where the shortest distance between activity and object exists for showering, and the most is found in family relaxation and cooking. This small sub-sample analysis shows that where the space is not solely controlled by the household (that is in shared accommodations), the likelihood of storing any personal belongings there is slim, hence to-and-fro movement increases for the daily activities in particular.

Figure 7-22: Examples of Orowa genotype

Figure 7-23: Examples of Double loaded corridor (segregated function spaces) genotype

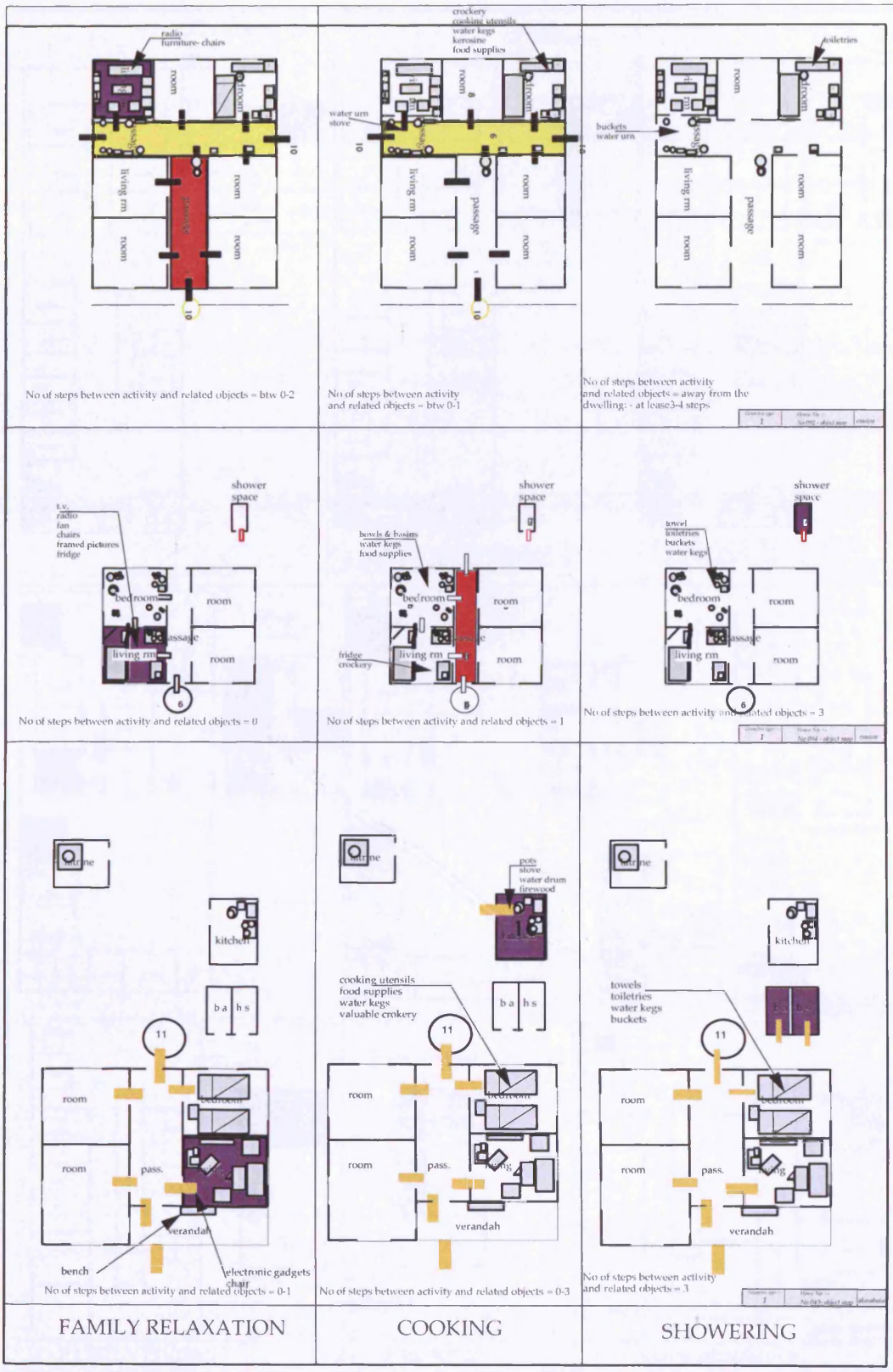


Figure 7-24: Examples of DL-corridor (int. kitchen) genotype

Figure 7-25: Examples of Single loaded (integrated kitchen) genotype

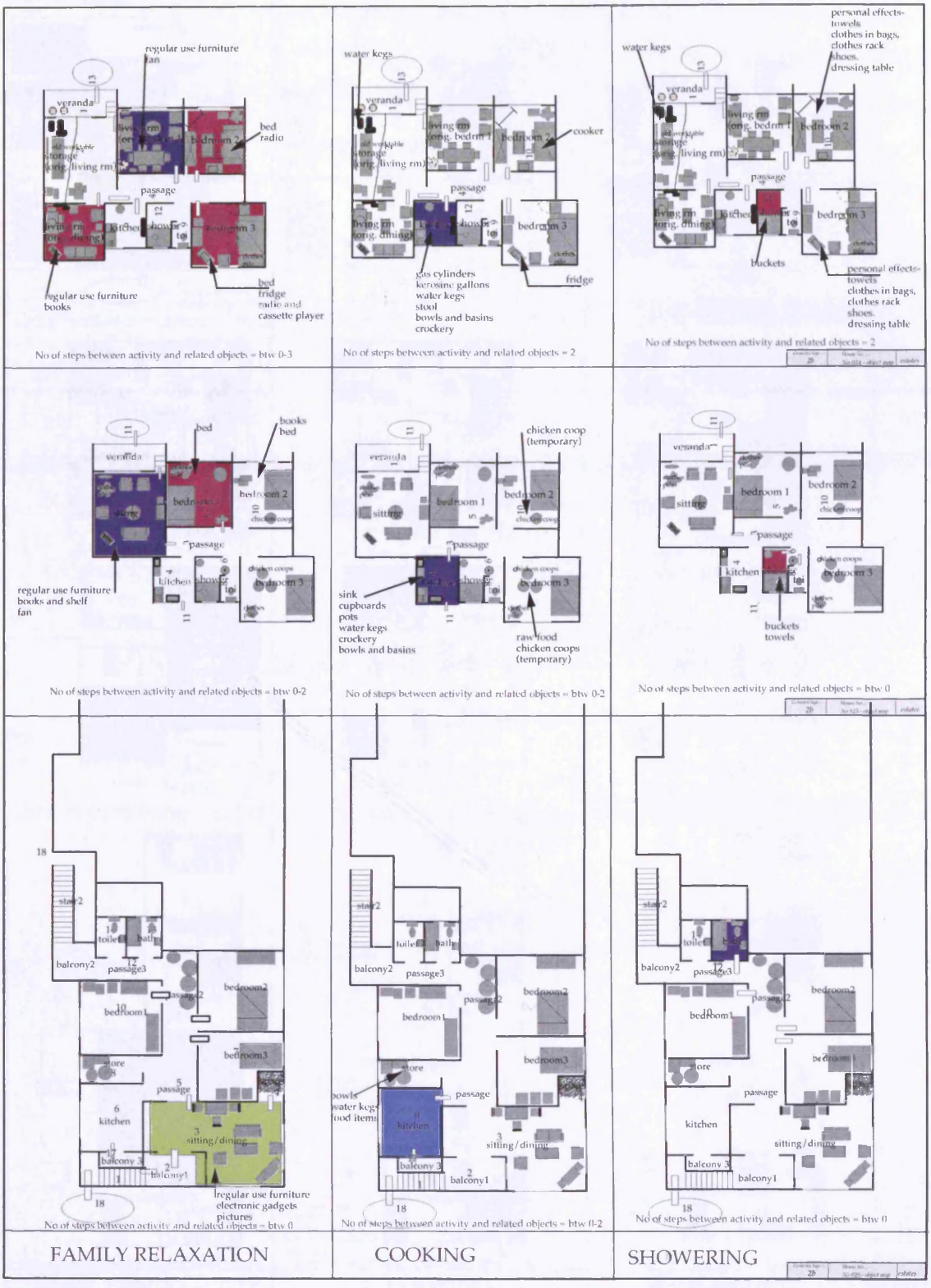


Figure 7-26: Examples of DL-corridor (seg. function spaces) genotype

Figure 7-27: Examples of Double-loaded corridor (segregated kitchen) genotype

7.1.11 Summary-

a) Firstly, the concept of a functional core of space labels was identified in the sample, which was demonstrated to have 'expanded' from the older to the newer genotypes partly in response to the allocation of existing functions into independent spaces. New activities were added to the domestic repertoire that were catered for in new spaces labels. The emergence of new space labesl in the newer genotypes was combined with the dissapearance of traditional orowa in the newer genotypes, coinciding with the demands of the educated middle income households, for new definitions of privacy, and functional needs. This supports ideas by various researchers and theorists linking changes in spatial configuration and space use with changes in social requirements. This idea of changing values placed on space, was outlined by tracing the movement of orowa-based objects to their new locations in the other genotypes, providing more evidence of changes in the value placed on particular activities.

b) A significant number of activities and objects had consistently wide extensibility across genotypes, whilst specific activities and objects had consistently limited extensibility. The main points of departure were in relation to cooking, food preparation, which were less extensible in the newer genotypes. The effect of extensiblity patterns of activities and objects on space was mainly in the degree to which each space is restricted to a narrow array of uses and content, or display a varied and wide array.

c) Several spaces were not as rigidly specialised as functions labels may suggest- the orowa, living room, main bedroom, bedroom, were all non-specialised in almost all genotypes with large and similar uses (activities), though more specialised in the Living-room genotype (a newer genotype), and the older DL-corridor (seg. function spaces) genotype. The toilet and bathroom were specialised in all genotypes, with the

differences occurring in the veranda, corridor, store and kitchen. Generally transition genotypes [DL-corridor (seg. function spaces) genotype, and the DL-corridor (int kitchen) genotypes], and the Living-room genotype, were more specialised with reduced extensibility for several of the activities surveyed. What was in operation in the sample is a high degree of non-specialisation (multifunctional use of space), though less pronounced in the newer genotypes, with only a few specialised space labels (reduced functionality). The domestic space seems to operate two organisational systems. Spaces that are specialised in terms of numbers of activities contained are distinct, but fewer spaces were specialised in terms of objects, suggesting that object location is slightly subservient to activity location. Slight variations in the main activities, and the more varied object arrays found in the core space labels across genotypes, a result of differences in how some activities take place, as well as infrastructural deficiencies.

d) Also, the effect of activity and object locations is that there is weak classification in several space labels with relatively strong framing, but the most strongly classified spaces are also dominated by strongly framed objects. This pattern holds across genotypes, apart from the DL-corridor (seg. function spaces) genotype, and the Living-room genotype, which are slightly more strongly classified and framed.

e) Differentiation was stronger in the newer genotypes with larger functional cores. Three of the transition-integrated genotypes have a negative categoric differentiation, but positive relative positioning, the DL-corridor (int. kitchen), and the Living-room genotypes both have positive categoric differentiation and relative positioning, and the oldest genotype (Orowa type) is unique in having both negative differentiation and positioning, when the inside/outside relationship is considered.

f) The relationship between activity and object arrays in each of the thirteen space labels revealed a marked degree of movement and retrieval of some objects into a different space where it is utilised. The key space labels were more prone to being used for the storage of these 'superfluous' objects (orowa, garage, toilet, main bedroom, veranda), indicating the fundamental role of the home as storage.

g) Although genotypes with larger functional cores, with several solely controlled function spaces, were slightly less intensely focussed on a single space, and genotypes with smaller function cores, with more shared space labels in multi-household contexts involved more movement between spaces, much of the intensity of use particularly for objects was on the living room and bedroom in most genotypes. The only exception was the Orowa genotype where intensity of use was focussed on the orowa.

h) There were changes in the syntactic properties of the living room and the bedroom, the kitchen and cooking have become less segregated in the newer genotypes. The changes in integration and depth values and ranking of spaces and activities indicate changes in perception within particular social classes. There was some syntactic banding of the activities based on the Monteiro (1997) classification system, except that the bands are not rigidly defined, and chores are in three bands of differing integration and depth. Similar situations exist for the objects, and the assessment of the related objects of three main activities, demonstrates that the objects that are in differently integrated spaces with varying depth is due to different value attached to the object or related activity.

Overall, there were more points of continuity between the old and the new genotypes than was expected, but the points of departure point partly to consequences of inadequacies in facilities, but also represent real differences in lifestyles.

Chapter 8: Activity and Object Meaning

The chapter discusses some of the main social rules that govern space use, and meanings attributed to objects and activities in the domestic space. The discussion on social rules revolves around the distinction between inhabitant and non-inhabitant involvement in domestic activities, and on whether activities are mostly chores or more leisure-based.

Object and activity meanings are explored primarily in relation to Csikszentmihalyi and Rochberg-Halton's (1981) concepts of action and contemplation aspects of objects. Results show that domestic activities in Yoruba life incorporate a strong focus on non-inhabitant participation. In addition, a significant number of domestic activities are chores, rather than leisure, while most of the meaning categories found are more functional than symbolic.

8.1 Question to be addressed

This chapter looks into the social aspects of the activity and object patterns outlined in chapter seven, and the main questions addressed are as follows.: -

a) What are the social rules manifested in the spatial (activity & object) patterns identified in the sample? This is addressed specifically in two areas where social rules in the domestic space are likely to be very evident. The first area of interest is agent participation- the distinction between individual, household, and visitor participation in domestic activities. The pattern of task orientation within the domestic space is also of interest, that is, whether an activity is a chore, or is leisure-based.

b) How do the respondents perceive the domestic realm of activities and objects in terms of the meanings attached to domestic objects and activities? To address this aspect, the respondents were asked to name the three special objects and important activities to them/the household and to give reasons why. Thirdly, c) what are the lifestyle implications reflected in any differences manifested in the respondents' responses about activites and objects that were considered important or special?

8.1.1 The home as an inwardly/outwardly focussed space

This section is about how inward or outward looking the domestic domain is within the sample and Yoruba culture in general, and is assessed on the basis of the degree of agent participation in each activity, and the cumulative effect of the activities in each space label and on the domestic space. It is in a sense an aspect of privacy in that it describes the extent to which the activity is dependent (or independent) of the involvement of other household members or non-inhabitants. The activities from chapter seven were assessed on the basis of Monteiro's (1997) classificatory system, of household chores, extended chores, passive leisure, interactive leisure, private needs, and communal needs, thereby incorporating the work and leisure identity. This is based on the total sample, but with a focus on the six core space labels.

LIVING ROOM	CORRIDOR	BEDROOM	KITCHEN	BATHROOM	OROWA
Family living	Gen. storing	Sleeping/Dressing	Cooking	Bathing	Cooking
Entertainment	Cooking	Reading/Studying	General Storing	Laundry	Family living
Eating	Family Living	general Storing	Food preparation	Toileting	Reading/studying
Reading/Studying	Eating	Family living	Eating	Family living	Food preparation
Sleeping/dressing	Read/study	Entertainment	Entertainment	General storing	Sleeping/Dressing
Religious	Ironing	Religious	Animal rearing	Religious	Entertainment
Host social events	Laundry	Ironing	Family living		General Storing
Cooking	Food prep	Cooking	other		Animal rearing
Food preparation	Retailing	Animal Rearing			Laundry
	Host Events				Ironing
	Other*				Toileting
					Retailing
					other

Household Chores
Extended Chores
Passive Leisure
Interactive Leisure
Private Needs
Communal Needs

Figure 8-1: Task orientation in the core space labels (based on total sample)

STORE	VERANDA	GARAGE	TOILET
General Storing	Family living	other- carparking	toileting
Sleeping/Dressing	Retailing	general storing	general storing
Cooking	General storing	Family living	
Sewing	Laundry	eating	
	Food preparation	Food preparation	
	Eating	Retailing	
	Reading/Studying		
	Sleeping/Dressing		
	Religious		
	Entertainment		
	Watercollecting		

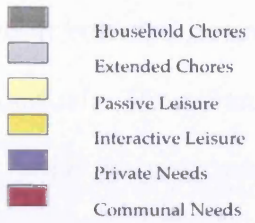


Figure 8-2: Task orientation in the store, varanda, garage and toilet

DINING ROOM	main bedroom	STUDY
Eating	Sleeping/Dressing	Reading/Studying
Reading/Studying	Reading/Studying	Sleeping/Dressing
Ironing	Family living	Family living
Family living	General storing	Religious
Entertainment	Religious	Entertainment
General Storing	Eating	Ironing
other	ironing	other
Sleeping/Dressing	Watercollecting	
Religious	other	
Retailing		

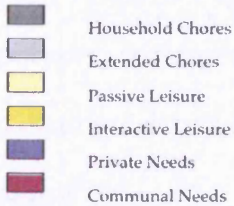


Figure 8-3: Task orientation in the dining room, main bedroom and study

Firstly we see that there are no 'pure' spaces: most spaces contain a mixture of all three categories of private, household and communal activities involving non-inhabitants in varying combinations (study, dining, living room, bedrooms, orowa, store, veranda, bathroom). Even spaces like the toilet and bathroom where the primary activities are private needs, are also utilised for other household needs such as storage and laundry. Secondly, the fact that private needs are mixed up with other activities in many space

labels indicates the reliance on temporal separation to handle the use of such spaces e.g. study, bedrooms, and bathrooms need to be regulated in time, to separate private needs from extended activities, which involve non-inhabitants. Only the garage, corridor, and the kitchen are devoid of private uses.

The domestic space is more dictated by the distinction between household and non-household, rather than by the seclusion of the individual. The reliance on temporal separation is more acute in shared dwelling types, although not uncommon in self-contained accommodation. Interactive and communal activities are also quite spread out and are an important part of space use in the living room, dining room, bedroom, and the orowa. As such, there is no rigid separation into public/private realms in space use, although the newer genotypes have a slightly better demarcation between public and private activities reflected by the presence of a smaller number of private needs in more space labels, but this was by no means a strong one. It is suggested that the separation into sectors, present only in the newer genotypes, corresponds to changes in the concept of privacy, specifically to a new desire to distinguish between public and private realms via increased specialization of individual privacy.

This lack of emphasis on public/private demarcation was also confirmed by the respondents who stated that many spaces are accessible to non-inhabitants, or to other non-household members as in the case of multiple household tenements. Privacy in the sample seems to relate to permeability, and the use of rules to include or exclude certain persons from participation from a specific activity, rather than from a given space label. Nonetheless, privacy is not a simple contrast between inhabitants versus visitor access. In this context, privacy is a quality created both by an increase in the depth of space labels such as the bedroom, and also by the household's decision to allow/deny access

to different categories of household members and visitors into a space label at different times. This description reflects the various dimensions incorporated in the definition of privacy in (Newell, 1998) derived from Margulis (1977) as including categories of " the condition of the person, condition of the place, process, attitude, behaviour, goal, situation, and time". Although a very low response to the question was obtained for some labels, these still provide some insight into space control. Table 8-1 shows the degree of visitor access to the core space labels split by genotype[79].

Table 8-1: Frequency of private needs and pattern of visitor access in spaces in each genotype

Space labels	visitor access	DL-corridor (seg. Kitchen)	SL-corridor (seg. Kitchen)	Living-room type	DL-corridor (int. Kitchen)	DL-corridor (seg. Function spaces)	Orowa type	total sample
living room	Yes	36 (45%)	38 (100%)	7 (100%)	14 (100%)	6 (100%)	11 (100%)	112 (71.3%)
	No	45 (55%)	0	0	0	0	0	45 (28.7 %)
kitchen	Yes	29 ((82.9%)	27 (75%)	10 (83.3%)	10 (76.9%)	3 (75%)	6 (85.7%)	85 (79%)
	No	6 (17.1%)	9 (25%)	2 (16.7%)	3 (23.1%)	1 (25%)	1 (14.3%)	22 (21%)
corridor	Yes	45 (95.7%)	19 (63.3%)	13 (100%)	7 (63.6%)	8 (100%)	7 (100%)	84 (83.2%)
	No	2 (4.3%)	11 (36.7%)	0	4 (36.4%)	0	0	17 (16.8%)
orowa	Yes	3 (100%)	n/a	n/a	n/a	1 (100%)	14 (100%)	18 (100%)
	No	0	n/a	n/a	n/a	0	0	0
bedroom	Yes	38 (77.6%)	22 (61.1%)	13(86.7%)	6 (42.9%)	10 (100%)	11(68.7%)	90 (69.2%)
	No	11 (22.4%)	14 (38.9%)	2 (13.3%)	8 (57.1%)	0	5 (31.3%)	40 (30.8%)
bathroom	Yes	34 (97.1%)	37 (94.8%)	10 (90.9%)	11 (78.6%)	5 (100%)	8 (100%)	92 (92.9%)
	No	1 (4%)	2 (5.2%)	1 (9.1%)	3 (21.4%)	0	0	7 (7.1%)

over 66% of the households in the genotype stated that the space is accessible to visitors

between 33% - 66% of the households in the genotype stated that the space is accessible to visitors

less than 33% of the households in the genotype stated that the space is accessible to visitors

Table 8-1 shows that some spaces are highly accessible to non-inhabitants such as the living room and orowa across genotypes, and others like the bedroom is more accessible to visitors in shared accommodations, but is only occasionally accessible to close friends, particularly for the younger household members in many of the self-contained units. The majority of the space labels in all the genotypes were accessible to visitors, though

[79] The break-down for the other space labels are included in the appendix

the Living-room genotype had the highest number of less accessible space labels. This produces a potential conflict of interest particularly in households with one-room accommodations, where visitor access coincides with a high number of private needs in the bedroom/living room. Access control becomes the main means of managing this juxtaposition in such spaces and there is very little direct spatial mapping of privacy.

The focus of the domestic realm in the sample is pretty much around household, and outward looking activities, as evidenced by the number of spaces with interactive, extended, and communal activities (e.g. retailing). The heavy use of outdoor spaces for activities and for storage mentioned in chapter six, also supports the proposition that domestic spaces in the sample are more orientated towards the household and the environment beyond, and less towards individual privacy, with only minor differences across genotypes. Although it can be argued that the use of outdoor spaces for storing water, and gas/fuel containers, would not have featured prominently if there were no shortcomings in supply, yet, outdoor space use is a strong part of the identity of all the households.

This outward focus is also reflected in responses to the question asking where the households spend most of its time in the domestic space. The pattern of responses has very strong correlations to the geometric type, to whether it is a shared or self-contained accommodation, and to socio-economic aspects. Over 70% of middle income educated respondents, mostly living in elongated and compact geometric types, claimed to spend most of their time in the living room. But a significant number of lower income, less educated households living in predominantly in shared, double-loaded, and orowa geometric types, spend most of their time in the living room as well as outdoors and the veranda.

8.1.1.1 Gender and generational differences in the focus of the home

While there is a prevalence of household activities in most parts of the domestic space, household participation is not gender neutral. Many of the household activities chores, and needs, are done mainly by females and children of both sexes old enough to do physically tasking chores. The inward/outward focus of the home, and how household members participate in activities is somewhat different for the genders, and between the younger and older generation, though dependent on a household's social outlook.

If perhaps leisure is gender neutral, the time available for leisure is not, because of the time required to complete household chores, and the chores that underpin the private and communal needs of each household. For instance, whilst eating is communal, it is reliant on other time consuming household activities e.g. cooking. Because female and younger members are more involved in household, and extended activities, they tend to be more aware of the chores that link them to the outside world- water collection, retailing, grocery shopping for cooking etc. Outdoor leisure activities like sports, are more of a focus of young males. So, whilst the Yoruba home across genotypes and socio-economic groups has a strong focus on the collective within and beyond, its nature is shaped by gender and age differences, as is evident in the next aspect to be discussed.

8.2.1 Degree of Task Orientation- 'The home as a workplace'

The second part of Monteiro's classification indicates whether the activity in question is a chore or 'work', or is associated with leisure and the enjoyment of social interaction or solitary time. The concept of task orientation distinguishes between activities viewed by the household as *'work'* i.e. domestic activities that are target specific, goal orientated,

and time-driven, with a collective benefit geared towards the reproduction of everyday domestic life, or are aimed at reinforcing social solidarities across space and time, and activities whose primary goal is for enjoyment. Many researchers such as Sinai (1998), and Mahmud (2003) have also acknowledged a third dimension, which is the presence of paid work (production) within the domestic domain, which was a part of traditional domestic life in many cultures. This opens up discussions about the home and claims that industrialisation and technological developments have led to a separation of the home and productive work, but despite a gradual dislocation of paid work from the home over time, the separation remains incomplete, as will be shown in this case.

This separation is identified by Davidoff & Hall (1987) amongst others, as pervasive and a by product of industrialisation in the west, but it would seem that the emphasis on separation may not be significant to the same degree in some cultures, as supported by the results of fieldwork into the presence of paid work or piecework in the domestic space by Tipple et al (2004), Sinai (1998), and Mahmud (2003) in various cities. Donald (1999) concludes that the home remains a key locus for reproductive work, entailing maintenance, and cleaning of the domestic space in many cultures. This has a strong gendered component according to Gazso-Windle and McMullin (2003), McFarlane et.al (2000), and Bianchi et al. (2000), even though less time is inputed into housework than before, and this kind of work is rarely legitimised as productive work because other work-based domestic activities are unpaid, hence, it is difficult to put a value to them.

Here in this study, we have distinguished between these three types of work a) reproductive-functional for the maintenance of domestic life and space; classed as household chores, b) reproductive-symbolic; activities directed at reinforcing social solidarities described as interactive leisure e.g. commercial cooking required for hosting

social events, religious activities etc, and c) production work recorded above as extended chores (mainly retailing or farming). Leisure based activities refer to activities that are perceived as being more motivated by enjoyment or pleasure and this is divided into passive and interactive leisure in this study. As mentioned previously, claims that industrialisation and technological developments have lead to a separation of the home and productive work may not be significant to the same degree in some cultures.

Table 8-2: Classification of the 14 domestic chores and leisure activities

reproductive work	symbolic work	Production work	Leisure	
household chore	extended chore	extended chore	passive leisure	Interactive Leisure
General storing	commercial cooking	Retailing	Family living	Entertainment
Laundry			Reading/Studying	Host Events
Food preparation				
Watercollecting				
Ironing				
Cooking				
Sewing				
Animal rearing				

Most of the domestic activities in the sample fall into the household chore category (eight activities - Table 8-2), and have a wide extensibility in the dwelling, dominating the activity profile of several space labels- the veranda, corridor, kitchen, orowa, bedroom and store (see Figure 8-1, p270). When the spaces that are predominantly needs based such as the toilet and bathroom are also taken into account because of the cleaning chores required to maintain them, we see that very few spaces are leisure-focussed. The bulk of domestic activities are focussed on reproductive-functional (household chores) and on some reproductive-symbolic chores e.g. ceremonial cooking that is a necessary component of the interactive leisure activity of the hosting of social events in Yoruba culture. Although differences between genotypes occur, these are not major. Financially

stable, educated households who have dwellings with a larger functional core (more core labels) have a slightly bigger leisure-based core (see Table 8-3, p278). Though more educated households are mainly based in genotypes with a higher number of specialised space labels, with a more recognisable leisure core, these space labels are not devoid of chore-based activities. The spatial separation of the dwelling into chore-based spaces and leisure-based spaces is at an early stage in the sample.

Table 8-3: Percentage of chores and leisure activities in the core space label in the genotypes

Percentage of chores and leisure activities in each space	DL-corridor (seg. Kitchen)		SL-corridor (seg. Kitchen)		Living-room type		DL-corridor (int. Kitchen)		DL-corridor (seg. Function spaces)		Orowa type	
	%tage chore	%tage leisure	%tage chore	%tage leisure	%tage chore	%tage leisure	%tage chore	%tage leisure	%tage chore	%tage leisure	%tage chore	%tage leisure
LIVING ROOM	13.0%	42.9%	12.5%	50.0%	0.0%	50.0%	0.0%	60.0%	16.7%	50.0%	12.5%	50.0%
KITCHEN	60.0%	20.0%	50.0%	33.3%	100.0%	0.0%	75.0%	0.0%	100.0%	0.0%	100.0%	0.0%
BEDROOM	14.3%	42.9%	37.5%	37.5%	14.3%	42.9%	28.6%	42.9%	20.0%	40.0%	14.3%	42.9%
CORRIDOR	57.1%	28.6%	75.0%	25.0%	100.0%	0.0%	100.0%	0.0%	66.7%	33.3%	50.0%	33.3%
BATHROOM	20.0%	40.0%	20.0%	20.0%	25.0%	25.0%	33.3%	0.0%	0.0%	0.0%	0.0%	33.3%
OROWA	50.0%	37.5%	-	-	-	-	-	-	75.0%	25.0%	46.2%	23.1%

spaces predominantly chore based

spaces predominantly leisure based

spaces with mixture of activities

Extended chores, mainly retailing, were found in the dining room, orowa, corridor, veranda, and garage in seventeen households, although the most popular location is the veranda because of the fact that it usually faces the front approach to the dwelling to capture passing trade. This, coupled with the shops and kiosks within the building plot that occurred in about 30% (forty-six no.) of the households surveyed, and the presence of retail goods within the domestic space in some of the plans surveyed, indicates that retail remains significant in Yoruba domestic spaces. This is similar to conditions

found by Sinai (1998) based on the effect of income-generating activities in low income dwellings in Accra, Ghana. Similar results were also reported by Mahmud (2003), which are not uncommon in poorer developing economies. Retailing in this sample was not restricted to lower income households - 40% (11) of the lowest income households used their dwelling for retail activities, while 25% (6) of the middle income households used their dwelling in this way. Retailing and retail goods, affect domestic space use because the need for transient storage, but also in connecting the household to the community.

8.2.1.1 The home as workplace and gender equity: -

The impact of gender on work and leisure time in the home is well documented in studies such as Gazso-Windle and McMullin (2003) using a Canadian sample which looked into why gender inequalities in domestic labour persists, in Ghafur's (2002) sample from low-income slums in Bangladesh and in Cunningham (2001). Manke et al. (1994), and Valadez and Clignet (1984), have also documented the strong female bias in domestic work. Although men's participation in domestic housework has increased in recent years as reported in many studies [e.g. Hersh and Stratton (2002)], home-based work that is unpaid (reproductive, and symbolic) as well as paid productive work, particularly lowly paid work in the informal sector and retail, remains predominantly a female domain. According to Hersh and Stratton (2002) study on the length of time spent on unpaid household work, when men participate in domestic work, the nature of the work done is different. Women spend more time on daily and time consuming work e.g. cooking, grocery shopping, which impact their earning capability with paid work, whilst men were involved in periodic work that are often on a flexible time scale (e.g. lawn mowing, car repairs).

The domestic space according to Donald (1999) is therefore not perceived as a place of labour by men folk, supported by the results of this study whereby the most favoured activity by men are relaxation and enjoyment. Though as mentioned earlier, age has a mitigating factor on participation in domestic chores in most Yoruba households, the onus of most of the work falls on the female members in most traditional low income households with little formal education. However, there is more gender equality amongst more educated families, which is also consistent with the findings of Gazso-Windle and McMullin (2003) who found that particularly when the economic resources of the female is closer to that of her spouse, she spends less time engaged in domestic labour and achieves more gender neutrality. It is not uncommon in many middle class homes in Nigeria to have live-in hired help or regular outside help to assists with specific chores like laundry. Nonetheless, gender bias does not completely disappear.

Although this study did not measure the amount and quality of time devoted to work and leisure by the genders as per Hersh and Stratton (2002) and Bittman and Wajcman (2000) and others, the question about which spaces does the household use most in the home revealed some gender-based preferences. This also supports the conclusion about the ongoing gendered effect of task orientation in the sample although not a very strong correlation. Slightly more men (63%) than women (57%) claimed to use the living room most, whilst more women mentioned the orowa and kitchen (no male mentioned the kitchen and only one man compared to five women mentioned the orowa); both are spaces where a lot of chores were concentrated.

As mentioned previously, the perception of what was the most used space was strongly affected by the level of education of the respondent and to a lesser extent, income level of the household. Those with college diplomas and university education claimed to spend

more time in the living room and bedroom, while those with little or no education claimed to spend most of their time in more communal spaces- living room, orowa, veranda and other outdoor spaces with only 3 respondents (5%) mentioning the bedroom. The bedroom was more likely to be treated as a place of retreat by the wealthier educated families where space use is slightly more specialised. In addition, the ability to retire to a bedroom is also increased by the sense of 'ownership' of space, which is more likely if the room belongs to just one or two members of the household as opposed to conditions in which the whole family sleep in the same bedroom.

When we combine the fact that domestic work is more female biased, and more time consuming for women, with the fact that many spaces in the domestic domain are more chore based, we see that the reality of the domestic space is gender modified, and exacerbated by inadequacies more prevalent in shared accommodation. The domestic space is perceived as an oasis from work by many men in the sample, but the experience of females and younger household members is more of the domestic space as 'workplace'.

It seems that task orientation and agent participation in the domestic space are culturally and socially determined. Both are shaped by what is regarded to be male and female work, although mitigated by age differences, education and income levels. Consequently, the domestic space is less of a workplace for both genders in middle income, educated households who have a more equitable view about the relationship between housework and gender, but men in such households may do even less work because of the ownership of more labour saving (kitchen) appliances and the ability to sometimes to hire help. Overall, improved income and education levels buys more leisure time, and makes it possible for the household to afford some degree of spatial demarcation of leisure areas.

8.3.1 Summary on social rules and its effects on genotypes

All the genotypes have a strong socially integrating focus although the manner in which they do so differ. All have a large work-based focus, with a female bias around many of the household and communal activities, but the newer self-contained genotypes (SL-corridor, and Living-room types) have a slightly larger leisure-based core and more gender-neutral involvement with chores, which translates into a less disparate experience of the domestic space. Gender and generational differences were less obvious between older and newer genotypes, but more significant between shared and self-contained ones. There was more reliance on temporal separation to mediate space use in shared accommodations than in the self-contained units, although it remains a necessary space use organisational tool in all genotypes. Whilst variations in the genotypes with regards to inward/outward focus, task orientation, and gender participations is a matter of degree,they reflect real differences in social disposition, as well as individual choices.

8.2 Social Meaning

The next question is: - how do spatial and social rules outlined in preceding section and chapters manifest in the meanings attached to domestic objects and activities? Respondents were asked to name the three special objects and important activities to them/the household, and why. This process was about uncovering private meanings, although as Richins (1994a) noted, private meanings may include elements of an object's public meanings as well as the individual's personal experiences. Also, public and private meanings may originate from the same source thereby making it difficult to separate them. Private meanings that embody public meanings, will be reflected as major similarities, in meanings attributed to an object by the respondents, and as a narrow range of meanings [Richins (1994a); Adams (1995); Rogan (1998)].

8.2.1 Activity Meanings

In response to this line of inquiry, a list of important activities identified by respondents was compiled, and the list of reasons used in describing the activities was coded into two patterns of meaning identified by Csikzentmihalyi and Rochberg-Halton (1981) in relation to special domestic objects. Some reasons or meanings attributed to objects in their study were focused on the ability to symbolise the self or the extended self, (i.e. kin, and friends), whilst other reasons were clearly focused on the intrinsic properties of the object e.g. function, aesthetics, and utility, or were goal orientated (non-self related). This distinction is discussed in this section, although the two may overlap, as meaning is often complex and may implicate aspects of self and non-self. The important activities are summarised in Table 8-4, p283, based on the total sample.

Table 8-4: Most important activities identified by respondents in the sample

IMPORTANT ACTIVITIES	eating (6)	religious activity(5 & 6)	entertain/relax (3)	sleeping (5)	cooking (1)	housework (1)	host parties/meetings (4)	study/reading (3)	trading (2)	family reunions (4)	other-play guitar etc (3)	no response	sum
daily, involves the family	46	5	16	35	35	16	1	4	0	0	2	0	160
to uphold unity in the extended family	19	12	16	2	0	1	11	0	0	2	0	0	63
for religious purposes	0	38	0	0	0	1	0	0	0	0	0	0	39
it is pleasurable	3	0	16	1	0	0	3	0	0	0	1	0	24
hygiene	0	1	0	1	0	20	0	0	0	0	0	0	22
it is our social responsibility	0	3	0	0	1	0	3	1	0	4	0	0	12
finanacial benefits	0	0	0	0	0	0	0	0	6	0	1	0	7
to maintain our heritage	0	0	1		0	0	0	6	0	0	0	0	7
because it is time consuming	1	0	0	1	1	0	0	0	0	0	0	0	3
educative	0	0	0	0	0	0	1	0	0	0	0	0	1
other	3	1	3	1	0	0	1	0	0	0	1	0	10
no response	5	4	0	1	1	0	0	0	1	0	0	3	15
	77	64	52	42	38	38	20	11	7	6	5	3	363

Note: self-related reasons are highlighted in blue.

NOTE:
no. 1:- refers to Household Chores
no. 2:- refers to Extended Chores
no. 3:- refers to Passive Leisure
no. 4:- refers to Interactive Leisure
no. 5:- refers to Private Needs
no. 5:- refers to Communal Needs

at least 5% of responses
less than 1% of total responses

The important activities mentioned by respondents contained a mixture of chores, leisure and needs, but only a few private activities (sleeping, playing the guitar, religious activities), with more leisure activities which involve the household and also guests - family relaxation/living, eating, farming, cooking, housework, entertaining guests, religious activities, hosting parties/meetings, trading and family reunions. Many of these activities are core aspects of even the smallest household (eating, sleeping, cooking and housework) and have the potential to affirm the household's identity, as well as its identity as part of a wider network. While the list is dominated by needs- family relaxation and entertainment is one of the top three- the presence of activities like housework, religious activities, and trading activities, may be peculiar to the sample.

With respect to the reasons given for the choice of activities, we see that more self-orientated language were used, but these focus more on the extended self, as opposed to the individual self, and the majority of the reasons related to the household itself. The most commonly mentioned reason is the daily and integrative nature of these activities in the household, which revolved around practical concerns about the household's interests but after these, was the interest in the maintenance of extended family solidarity, well above references to personal pleasure. The emphasis on the solidarity with the community at large was expressed in other guises about social responsibility and the need to maintain (cultural) heritage. The most common reasons are explored below.

Many of the respondents that emphasised the **daily need aspect of activities** focussed on the amount of time invested in such activities, but the majority valued the daily nature of most of these activities- eating, sleeping, cooking, family entertainment and relaxation, housework- because of the time spent with household members. This did not refer to family unity, which is treated as a separate reason, but to the need to pool

resources-energy and time, to complete such activities. References to sleeping was more for the enjoyable time invested in it, whilst eating was valued more for its ability to bring household members together. References to cooking and housework embody: - their daily, time-intensive nature, benefits from the collaborative efforts of the household, and their social dimension.

The reference to **unity in the family** was the second most cited reason for the importance of five of the activities, and referred to socialisation and solidarity within the household and the extended family. Many of the respondents considered the ability to help maintain solidarity a significant dimension of activities such as religious activity, eating, entertaining guests and relaxation, hosting parties/meetings, and curiously for sleeping. Eating, religious activity (prayer times), and entertainment & relaxation were important for the household, while aspects of religious activities, entertainment, hosting parties/ meetings were relevant in reinforcing relationships beyond the household.

Only 6.9% made reference to the benefits of an activity in connection to the personal self. They commented on the **pleasure** derived from entertainment (of self, family, and guests), from relaxation in the home, and also from eating, hosting parties/meetings, sleeping, and playing games/guitar. These feelings were related to the completion of the activity, or its by-product, such as the sense of feeling refreshed after a good sleep.

Learning and cultural heritage were grouped together because of a similar emphasis on knowledge (both formal-written and informal-cultural) as part of the reproduction of social norms and society, as well as the development of individual self and acquisition of skills. A number of respondents considered the need to be aware and knowledgeable of Yoruba cultural heritage a driving force behind activities such as reading/studying for the formal acquisition of knowledge (learning), while a small fraction identified cultural

heritage with entertainment, hosting social events, and trading (14%).

Religious benefits were mostly attributed to religious activities, although one of the forty-two religious explanations related to playing the guitar. The majority of the religious activities referred to Christianity but some were connected to traditional Yoruba religions and Islam. Religious activities were clearly considered to have a strong integrative component in the larger society, whereby the focus often includes winning converts (mainly with the Christian faith). Christian religious activities include individual prayer times, household prayer times, or group bible study, which usually involve non-household members, while Yoruba religion with its pantheon of 16 gods under one supreme creator (Olodumare) involves both sacrificial rituals; accessible to a select group (mainly the priests, chiefs), public ceremonies and festivals open to the devotees, and also the use of private shrines in domestic homes.

A small percentage of the sample mentioned hygiene, social responsibility and financial reasons as well as dispute resolution & stress release under the miscellaneous category. The time intensive, and educative nature of some activities was described as the driving force behind the relevance of some activities. Whilst these 6 categories in total constitute less than 15% of the responses, they are worthy of a brief mention. Hygiene/health was overwhelmingly identified with housework although a few respondents mentioned it in relation to sleeping and miscellaneous activities, while financial viability only featured in 2.6% of the reasons for the importance of activities almost exclusively about trading activities, which are non-self related. Social responsibility was mentioned in 3% of responses but it is identified with - family reunions, religious activity, cooking (ceremonial), studying/reading, host parties/meetings, and trading, all of which have a group element relating to non-inhabitants of the household. Family reunions was the key activity identified with social responsibility, hence an aspect of the extended self.

The other 3 reasons form less than 4% of the results and in some cases are incorporated within some of the other reasons but they are kept as a separate category, as a few respondents expressed this in their 'pure' form. These are firstly, about the time intensive nature of activities like eating, sleeping cooking and farming. Secondly, the educative nature of hosting meetings of social/philanthropic associations was mentioned by a single respondent in relation to the bonding effect of such groups, as well as the role that they play within the community. Although the main beneficiaries of such activities are usually non-household members, Belk, (1988) argues that the individual self benefits indirectly from the feeling of being part of a larger group/entity and from philanthropic actions. Finally, the miscellaneous category includes reasons such as dispute resolution, and stress release, in connection with religious activity, eating, sleeping, entertainment/ relaxation and playing games. These benefits are largely psychological and of direct importance to the individual self, and by extension, to the rest of the household.

Overall, most of the important activities embodied strong features of public meanings, although a few seemed more varied in the meanings ascribed to them, and contain more private meanings. References to eating, cooking, housework, trading, study/ reading, and family reunion, contain strong references to just one or two reasons, although housework, sleeping, and eating reflect more individualistic meanings, which shows that a few people highlighted aspects of these activities. Religious activities, entertainment/relaxation, sleeping, hosting social events, whilst having a public component in the dominant meanings, reflected more private and symbolic meanings for many respondents. This is most evident in the manner in which religious activities are described (integrative at the household and extended level, social responsibility, and even hygiene). Only playing the guitar was described using more private meanings.

8.2.1.2 Genotypical differences in important activities

There were minor differences between genotypes- the smallest range of activities and reasons came from the enduring genotype [DL-corridor (seg. function spaces) type] respondents, who are also in the lower education and income group, with most of their descriptions of activities were rooted in the public meaning realm. Respondents in the DL-corridor (int kitchen), and the Living-room genotypes expressed marginally wider choice and meaning range, but still most of the descriptions were within the public meaning realm except for religious activities and sleeping that reflected more private meanings. Interestingly, the Orowa genotype was similar to the SL-corridor, and the DL-corridor (seg. kitchen) genotype in having a wide range of activities and all three were more reflective of a combination of public and private meanings (see Table 8-5, p288).

Table 8-5: Activities and meanings in Orowa genotype

IMPORTANT ACTIVITIES - OROWA GENOTYPE	religious activity(5 & 6)	eating (6)	host parties/meetings (4)	housework (1)	entertain/relax (3)	cooking (1)	sleeping (5)
to uphold unity in the extended family	2	2	3	0	1	0	0
hygiene	0	0	0	4	0	0	0
it is our social responsibility	3	0	1	0	0	0	0
daily, involves the family	0	2	0	0	0	2	2
for religious purposes	5	0	0	0	0	0	0
it is pleasurable	0	1	0	0	1	0	0

Note: self-related reasons are highlighted in blue.

At least 5% of responses

NOTE:-
no. 1:- refers to Household Chores
no. 2:- refers to Extended Chores
no. 3:- refers to Passive Leisure
no. 4:- refers to Interactive Leisure
no. 5:- refers to Private Needs
no. 6:- refers to Communal Needs

Table 8-6: Activities and Meanings in the Corridor genotypes

IMPORTANT ACTIVITIES - DL-CORRIDOR (SEGREGATED FUNCTION SPACES) GENOTYPE	entertain/relax (3)	cooking (1)	eating (6)	sleeping (5)	religious activity(5 & 6)	study/reading (3)	trading (2)
daily, involves the family	3	4	2	2	0	1	0
to uphold unity in the extended family	1	0	1	0	1	0	0
financial benefits	0	0	0	0	0	0	1

IMPORTANT ACTIVITIES - DL-CORRIDOR (INTEGRATED KITCHEN) GENOTYPE	eating (6)	housework (1)	religious activity(5 & 6)	cooking (1)	sleeping (5)	entertain/relax (3)
daily, involves the family	4	1	0	6	4	0
for religious purposes	0	1	6	0	0	0
to uphold unity in the extended family	4	0	0	0	0	2
hygiene	0	5	1	0	0	0

IMPORTANT ACTIVITIES - SL-CORRIDOR (INTEGRATED KITCHEN) GENOTYPE	eating (6)	entertain/relax (3)	religious activity(5 & 6)	sleeping (5)	housework (1)	cooking (1)	study/reading (3)
daily, involves the family	12	4	2	8	1	6	0
to uphold unity in the extended family	4	9	6	0	1	0	0
it is pleasurable	2	8	0	0	0	0	0
for religious purposes	0	0	11	0	0	0	0
hygiene	0	0	0	1	6	0	0
to maintain our heritage	0	0	0	0	0	0	6

Table 8-7: Activities and Meanings in the Living-room, and DL-corridor (seg. kitchen) genotypes

IMPORTANT ACTIVITY - LIVING-ROOM GENOTYPE	eating (6)	sleeping (5)	religious activity(5 & 6)	cooking (1)	entertain/relax (3)	host parties/meetings (4)
daily, involves the family	6	4	1	4	0	0
to uphold unity in the extended family	2	1	1	0	2	2
it is pleasurable	0	0	0	0	0	1
for religious purposes	0	0	4	0	0	0
because it is time consuming	1	1	0	1	0	0

IMPORTANT ACTIVITIES - DL-CORRIDOR (SEGREGATED KITCHEN) GENOTYPE	eating (6)	entertain/relax (3)	religious activity(5 & 6)	sleeping (5)	housework (1)	cooking (1)	host parties/meetings (4)
daily, involves the family	20	9	2	15	11	13	0
to uphold unity in the extended family	6	1	2	1	0	0	5
for religious purposes	0	0	12	0	0	0	0
it is pleasurable	0	7	0	0	0	0	0

Note: self-related reasons are highlighted in blue.

At least 5% of responses

Less than 1% of total responses

NOTE:
- no. 1:- refers to Household Chores
- no. 2:- refers to Extended Chores
- no. 3:- refers to Passive Leisure
- no. 4:- refers to Interactive Leisure
- no. 5:- refers to Private Needs
- no. 6:- refers to Communal Needs

8.2.0.1 Socio-economic, gender and generational differences: -

Researchers like Adams (1995), acknowledge that the kind of spatial access available to people depend on many factors, such as race, gender, social class, and age; therefore, their experiences and meanings attributed to activities or objects may differ. The views expressed by the respondents were thus analysed on the basis of gender, age and educational levels, and whilst the correlation between gender and important activities was not very strong, a number of differences based on gender exist (see Table 8-8, p291). More female respondents mentioned cooking, religious activities, housework, trading, farming and hosting parties/meetings; all activities that are task-oriented with a strong 'work' aspect as being important, even after adjusting for the differences in the proportion of female respondents. Leisure based activities like entertainment/relaxation, studying/reading, eating, and playing the guitar were slightly more favoured by male respondents.

Table 8-8: Important activities split by gender

Activity	Male	percentage	Female	percentage
eating	38	21.2%	49	19.4%
religious	22	12.3%	48	19.0%
entertain/relax	36	20.1%	26	10.3%
sleeping	20	11.2%	27	10.7%
cooking	14	7.8%	27	10.7%
housework	11	6.1%	28	11.1%
study/read	15	8.4%	9	3.6%
other-play guitar,etc	12	6.7%	13	5.1%
host parties/meetings	4	2.2%	17	6.7%
trading	4	2.2%	5	2.0%
family reunions	3	1.7%	3	1.2%
farming	0	0.0%	1	0.4%
Total	179		253	

Note: Activities identified mostly with non-self related reasons are highlighted in blue.

Male respondents displayed a bias towards leisure-based activities and the females mentioned more work-related activities though overall, there are more work-related activities in the list of important activities. There were slightly stronger relationships between age and the choice of important activities than gender differences. Table 8-9 p292 shows that while eating, studying/reading and family reunions were less affected by age differences, there is a drop in significance from the youngest to the oldest age group and a general drop in the frequency of cooking and housework with increasing age.

Table 8-9: Important activities split by age

Frequency of most important activities based on Age of respondent								
Activity	Age15 - 24yrs		Age 25 - 34yrs		Age 35 - 44yrs		Over 45yrs	
eating	20	23.3%	25	20.3%	23	18.9%	18	18.8%
religious	5	5.8%	20	16.3%	23	18.9%	15	15.6%
entertain/relax	13	15.1%	18	14.6%	18	14.8%	17	17.7%
sleeping	11	12.8%	14	11.4%	12	9.8%	10	10.4%
cooking	9	10.5%	13	10.6%	9	7.4%	9	9.4%
housework	11	12.8%	6	4.9%	13	10.7%	9	9.4%
study/read	5	5.8%	8	6.5%	7	5.7%	4	4.2%
other-play guitar,etc	7	8.1%	8	6.5%	4	3.3%	6	6.3%
host parties/meetings	4	4.7%	9	7.3%	4	3.3%	4	4.2%
trading	0	0.0%	1	0.8%	5	4.1%	3	3.1%
family reunions	1	1.2%	0	0.0%	4	3.3%	1	1.0%
farming	0	0.0%	1	0.8%	0	0.0%	0	0.0%
Total	86		123		122		96	

Note: Activities identified mostly with non-self related reasons are highlighted in blue.

More respondents in the youngest age group considered these activities to be important probably because in Yoruba culture, daily chores such as sweeping, cleaning, laundry (hand-wash) usually fall on younger household members. Consequently, chores were important for them, but not for enjoyment reasons, as most respondents emphasised its daily nature. The percentages of respondents aged 45 years and above who mentioned cooking and housework were slightly more than the 35-44year olds. This is probably due to by the fact that they are more likely to have children who have flown the nest, hence participate more in these activities.

The two younger age groups cited leisure activities such as hosting parties/meetings as being important more often than the older groups, while production work- farming, and trading (and also religious activities) were mentioned mostly by the older generation. Understandably, financial resources is the key reason cited about trading and this is more likely to be of concern to the older generation.

Entertaining/relaxation was most popular with the youngest and oldest, and dips in importance with the two middle age groups, who predominantly constitute the workforce age range and are less likely to have less spare time on their hands. In all, similar top three activities occurred in all age groups.

There were some differences in relation to the education level of the respondents with religious activities, hosting social events, and family reunion being a greater proportion of responses from respondents with no education in comparison to the responses from college and university graduates (see Table 8-10, p294). Housework was also more frequently mentioned by respondents who had no education or only up to secondary school level of education. These were in the main also in the two younger age groups, and who as stated previously are more involved with household chores.

Educational levels of respondents and age have a strong correlation as described in chapter four, and the effects of these, in combination with gender differences on the choice of important choices is that reproductive work/chores activities featured more for females and younger people under 35yrs old. This is because advancing age has the added benefit of reduced participation in chores but, non-work based activities were more mentioned by young men because of the effect of gender on housework participation to a large extent. The older groups were more focused on production work activities except in the over 45yr age group who mentioned relaxation activities a bit more than the 25-44

adult working ages. Overall, daily routine and time demands of task-based activities are the key reasons why these activities loomed large in the sample.

Table 8-10: Important activities split by education level of respondent

LEVEL OF EDUCATION OF THE RESPONDENT	primary school only	%tage	secondary school only	%tage	some college education	%tage	university degree	%tage	none	%tage	other	%tage	total
EATING	10	18.5%	21	22.1%	21	25.0%	28	23.9%	2	4.9%	0	0.0%	82
RELIGIOUS	6	11.1%	15	15.8%	16	19.1%	18	15.4%	12	29.3%	1	12.5%	68
ENTERTAIN/ RELAX	10	18.5%	12	12.6%	15	17.9%	23	19.7%	5	12.2%	1	12.5%	66
SLEEPING	4	7.4%	16	16.8%	11	13.1%	13	11.1%	0	0.0%	1	12.5%	45
COOKING	6	11.1%	10	10.5%	5	6%	10	8.6%	2	4.9%	1	12.5%	34
HOUSEWORK	3	5.5%	7	7.4%	3	3.6%	5	4.3%	6	14.6%	2	25.0%	26
STUDY/READING	1	1.8%	3	3.2%	8	9.5%	11	9.4%	0	0.0%	0	0.0%	23
HOST PARTIES/ MEETINGGS	4	7.4%	3	3.2%	2	2.4%	4	3.42%	8	19.5%	0	0.0%	21
TRADING	5	9.2%	1	1.1%	0	0.0%	0	0.0%	1	2.4%	0	0.0%	7
FAMILY REUNIONS	0	0.0%	0	0.00%	1	1.2%	1	0.9%	2	4.9%	0	0.0%	4
FARMING	0	0.0%	0	0.00%	0	0.0%	1	0.9%	0	0.0%	0	0.0%	1
OTHER- PLAY GUITAR, etc	5	9.2%	7	7.4%	2	2.4%	3	2.6%	3	7.4%	2	25.0%	22
TOTAL	54		95		84		117		41		8		

8.2.1 Object Meaning

Each respondent was asked to name the 3 most special objects to them or to the household, and to give reasons why these are 'special'. The use of the word 'special' was considered flexible enough to enable respondents to express their feelings in a variety of ways. All the objects in the sample were categorised using Csikzentmihalyi and Rochberg-Halton (1981) concepts of *action* and *contemplation* that describe the symbolic meanings of objects and their abilities to *"Convey feelings and attitudes that had an objective existence outside immediate*

situations...p21". Action objects by their nature require some physical manipulation or mastery of control in order to release their meaning (and use). e.g. musical instruments, pets, vehicles, stereo etc. Contemplation objects are things that do not require physical interaction to release their meaning e.g. photographs, paintings, sculpture, books, plateware (chinaware) etc. According to Csikzentmihalyi and Rochberg-Halton (1981) *'the intrinsic quality of an object lends itself to either action or contemplation'* and dictates the categorisation process, although it does not preclude more personal interpretations. The majority of the objects in the domestic inventory, and the special objects, were action objects. A second point of interest were the meanings attributed to the objects identified as special, which are summarised as focused on a) the *self* or the extended self, or b) on non-self issues as discussed previously. The special objects were analysed in this way, and in terms of their ability to portray public and private meanings (Table 8-11, p295).

Table 8-11: Special Objects and meanings attributed to them

SPECIAL OBJECTS - TOTAL SAMPLE	electrical goods (1)	furniture (1)	clothing (1)	food (1)	cooking utensils (1)	fridge/freezer (1)	cooker (1)	religious items (1)	cars/bikes (1)	fan & clock (1)	books & documents (2)	crockery (1)	retail goods (1)	iron and elect. Appliance (1)	picture &artwork (2)	jewellry (1)	phone & guitar (1)	other- portable water (1)	sum
utility	9	41	18	26	22	6	14	1	0	2	7	4	0	1	0	0	0	12	163
information purposes only	35	1	1	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	40
convenience	7	1	0	0	1	2	2	4	16	1	0	0	0	1	0	0	1	0	36
enjoyment & relaxation	18	7	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	29
religious	0	1	1	0	0	1	0	14	1	0	0	0	0	0	0	0	0	1	19
sentimental & aesthetic	1	1	6	0	0	0	0	0	0	1	2	0	0	1	2	1	0	0	15
expensive & irreplaceable	7	2	0	0	0	0	0	0	1	1	2	1	0	0	0	0	0	0	14
storage	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	12
ventilation and environmental reasons	0	0	0	1	0	11	0	0	0	0	0	0	0	0	0	0	0	0	12
enjoyment & information	0	0	0	0	0	0	0	0	0	10	0	0	1	0	0	0	0	0	11
income generating	0	0	0	0	0	1	0	0	0	0	0	0	5	0	0	0	0	4	10
other- status, family heirloom etc	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
family unity	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
no reason given	4	3	4	1	3	1	2	0	0	0	0	1	0	0	0	0	0	0	
sum	92	59	33	29	27	22	19	19	18	15	14	6	6	3	2	1	1	25	391

Note: self-related reasons are highlighted in blue.
no. 1: - denotes Action objects
no. 2: - denotes Contemplation objects
at least 5% of responses
less than 1% of total responses

Non-self-related reasons were most often cited in describing special objects; quite at odds with the situation with important activities, which related more to the extended self. The types of objects mentioned are not all peculiar as thirteen of the object categories found in this study were also extremely popular in Csikzentmihalyi and Rochberg-Halton's (1981) results- furniture, electrical goods, books, photos and artwork, refrigerator, cars & bikes, clocks, clothing, crockery, electrical appliances, telephone, etc) - but these were not necessarily ascribed the same kinds of meanings as more meanings in their study were symbolic for the individual self. A significant proportion of other objects mentioned in Csikzentmihalyi and Rochberg-Halton (1981) and Richins (1994b) by several respondents such as jewellery, was hardly mentioned in this study. A few of the special objects seemed more specific to the sample context- retail goods, food, cooker and portable water. The special objects and related meaning categories are explored below.

Not surprisingly, **electronic goods** (TV, stereo, loudspeakers, radio) constituted about a quarter of the responses and the most common reason given was the value placed on obtaining information particularly from t.v and radio. There was quite a range of reasons given for the special attachment to electrical goods. Information was mentioned in 39% of the responses as being the main value derived from these objects, followed by enjoyment (18% of responses), utility, convenience, its expensive & irreplaceable value, and its ability to convey status (part of the 'other' category). But a few respondents saw it as enhancing family unity, while one respondent mentioned sentiment/aesthetics.

A lot of people related to the 'intrinsic' properties of these objects (function/utility, information) but it is of interest that 7% of the responses related to the ability of electronic goods to embody status. Status may even be a stronger dimension to the meaning attached to these goods when viewed in combination with the 7% who emphasised the

expensive nature and the difficulty of replacing such goods. Electronic goods were the object category most identified with status and expense, and seemed to be able to embody both public and more private meanings (e.g. family unity, and religious reasons). This pattern of meanings were similar to the result of Csikzentmihalyi and Rochberg-Halton's (1981) study in which they found that more people saw the television set and the stereo as providing personal enjoyment, but few associated it with memorable occasions.

Furniture (settees, dining sets, chairs, low stools, beds) was the second most common special object category perhaps because furniture are usually on display and often constitutes significant financial investment particularly for the living room. This raises the issue of how considerations about what is on display or hidden, related to status, and the results in this study suggests that objects on display have the potential to convey status. Unlike electronic goods, the majority of the responses in this category focussed on the utility derived it, although a few respondents viewed their furniture in terms of enjoyment, convenience, expense & difficulty to replace, and storage functions.

References to furniture were popular across the board, with thirty-seven of the sixty-nine respondents who mentioned furniture being low or average income households. The meanings that furniture embodied in this study is at odds with Csikzentmihalyi and Rochberg-Halton (1981) results in which the largest classes of meanings relating to furniture was about memories, stylistic reasons, experiences, and only 5% made references to utilitarian aspects of it. This category demonstrates clearly how a category can hold quite opposite meanings at the individual levels and across cultures. Perhaps, the absences of heirloom furniture from most of the houses in this study precluded certain types of ideas being associated with furniture.

Clothing was mentioned as special in about 9% of the responses and half of these emphasised the practical utility that clothes provide, although about a quarter highlighted its sentimental & aesthetic value. This seems to be a result of the fact that many respondents separate clothes for daily use, from clothes for dressing-up purposes, and the two types of clothing evoked different responses. A small number of respondents see clothing in terms of enjoyment (related to the aesthetic reason), convenience (related to utility), storage conditions that it requires, and one mentioned religious reasons- the fact that they need to be covered appropriately as prescribed by their religion.

Food is mentioned as a special object in about 8% of the responses and it is perceived as such for its utility and necessity. Only two non-utility reasons were mentioned in relation to food. It is the second most mentioned object in connection with utility meanings.

Cooking utensils (pots, extra large pots & cauldrons, etc) were mentioned in about 8% of responses because of the utility derived from them. Cooking utensils were more mentioned by females probably because cooking has a female bias, and because owning quality pots and pans for ceremonial cooking is something women considered important in Yoruba culture, although not many can afford it in the current economic situation.

The **fridge & freezer** is mentioned in over 5% of the special object list, but quite skewed in its distribution across the sample. About three-quarters of the households on campus and the estates had a fridge but, as may be expected, more of the people in Akarabata and Enuwa for whom it is more of a luxury mentioned this object(s) as special. For many, fridges and freezers were special because of a combination of enjoyment and utility, its usefulness, and convenience, but a few mentioned it for religious reasons and for income generation (for storing food products for sale).

Twenty-three respondents considered the **cooker and stove** to be special although similarly to the fridge, residents in the poorer areas placed more premium on these items, many who did not possess a cooker, and relied on a stove or coal pot. The utility derived was the most common reason given for the special nature of these items, but a few also mentioned the convenience, enjoyment and a combination of the enjoyment & usefulness; reasons which are within the realm of more normative, public meanings.

The **car, motorbike & bicycle** were included in the same category because they serve the same purpose. The highest number of car owners was in the campus and the Estates but, the highest numbers of respondents who considered this a special category, were also in the more affluent Campus and Estates. Only seven of the households in Enuwa and Akarabata mentioned owning some form of transportation and none had cars. Convenience was the main reason given for considering cars, etc to be special. Only one respondent mentioned its expensive nature, which is surprising given the economic situation in Nigeria where the cost of an average saloon car is many times the annual salary of the minimum wage earner, and few forms of car financing are available. Many drive fairly old cars, which may explain why none mentioned it as a status symbol.

A **miscellaneous category** was included for objects not mentioned often (portable water containers, and chieftancy title plaques). Portable water containers (jerry cans, kegs) are quite common in many Yoruba homes, as already mentioned previously, and its distribution is evenly spread in the 4 sample areas, although water supply is much better on the Campus. Paradoxically, the respondents in the more deprived areas hardly mentioned water as a special commodity; they seem to take the considerable physical labour and time invested in getting water from a well or public water point as a given. The chieftancy plaques come with the traditional title or office held, and an important

visible evidence of the social standing of the owner. They were only mentioned by a couple of Enuwa respondents, quite understandably as many of the higher-ranking chiefs live there. It is a symbol of power, and a sense of belonging to an exclusive group that is mainly accessible by ascription, and as such a potent status symbol.

Objects such as furniture, and food/cooking related objects were strongly perceived by all categories of respondents mainly in line with their public meanings, and only a few objects seemed to convey more private and varied meanings - electrical goods, clothing, fridge/freezer, books and documents, retail goods, pictures and artwork, and jewellery.

Minor differences occurred in the responses from different genotypes, and these seemed to reflect differences in education, tenure patterns, and general outlook. The most frequently mentioned special objects were very similar in all genotypes (electrical goods, furniture and cooking utensils) apart from the residents of the Orowa gentoype (see Table 8-12, p301), where the top three special objects are clothing, religious items and food. The main difference with the Orowa genotype residents is that more 'basic' objects seem to take pre-eminence over more 'luxury' objects like electrical goods. Residents of the DL-corridor (seg. function spaces) genotype and the Living-room genotype picked similar objects that were described in language strongly conforming to public meanings revolving round utility, and convenience. No one made reference to any sentimental attachments to their objects, despite the fact that residents of the Living-room genotype are more educated, and residents of the DL-corridor (seg. function spaces) genotype are of the working classes. Residents of the other genotypes, who on the whole are more middle-income educated households, whilst identifying similar objects to the others expressed more personal meanings in relation to the popular special objects.

8.2.1.1 *Meaning classes attributed to special objects*

Overall, the list of special objects has many objects related to cooking and eating (5), and also several objects commonly found in the living room. As a result it is not unexpected that the majority of the reasons were related to non-self aspects of the objects. Close to half of all the special objects (food, cooker, clothing, furniture, cooking utensils, crockery, books and documents, portable water) were described in relation to their **utility,** but different forms of utility and use value were embedded in this class: - a) education, learning and reference purposes in relation to books and documents, b) sustenance in relation to food, cooker, cooking utensils, crockery, and c) for maintenance of the home in terms of hygiene and upkeep of the domestic space and food preparation- portable water. (see p301-303 for results for the six genotypes) Items highlighted in yellow constitute at least 5% of the responses.

Table 8-12: Object-meaning matrix for the Orowa genotype

SPECIAL OBJECTS - OROWA GENOTYPE	clothing (1)	religious items (1)	food (1)	furniture (1)	electrical goods (1)	crockery (1)	cars/bikes (1)	cooking utensils (1)
utility	6	0	4	2	0	2	0	2
religious reasons	1	4	0	0	0	0	0	0
storage	1	1	0	2	0	0	0	0
income generating	0	0	0	0	0	0	0	0
sentimental & aesthetic	1	0	0	0	1	0	0	0
convenience	0	0	0	0	0	0	2	0
enjoyment & relaxation	0	0	0	0	2	0	0	0

Note: self-related reasons are highlighted in blue.
no. 1: - denotes Action objects
no. 2: - denotes Contemplation objects
at least 5% of responses
less than 1% of total responses

Table 8-13: Object-meaning matrix for DL-corridor (seg function spaces) and DL-corridor (int kitchen) genotypes

SPECIAL OBJECTS - DL-CORRIDOR (SEGREGATED FUNCTION SPACES) GENOTYPE	furniture (1)	electrical goods (1)	cooking utensils (1)	fridge/freezer (1)
utility	5	2	2	1
convenience	0	2	0	0
enjoyment & relaxation	1	2	0	0
income generating	0	0	0	1
information purposes only	0	2	0	0

SPECIAL OBJECTS - DL-CORRIDOR (INTEGRATED KITCHEN) GENOTYPE	electrical goods (1)	furniture (1)	clothing (1)	food (1)	fridge/freezer (1)
utility	0	6	4	5	0
enjoyment & relaxation	3	0	1	0	0
convenience	0	0	0	0	1
information purposes only	2	0	0	0	0
religious reasons	0	0	0	0	0

Note: self-related reasons are highlighted in blue.

no. 1: - denotes Action objects

no. 2: - denotes Contemplation objects

at least 5% of responses

less than 1% of total responses

Table 7-3: Object-meaning matrix for SL-corridor, Living-room, and DL-corridor (seg. kitchen) genotypes

SPECIAL OBJECTS - SL-CORRIDOR (INTEGRATED KITCHEN) GENOTYPE	electrical goods (1)	furniture (1)	fridge/freezer (1)	cars/bikes (1)	cooking utensils (1)	clothing (1)	food (1)	cooker (1)
utility	2	10	1	0	5	1	5	5
enjoyment & relaxation	6	1	6	0	1	0	0	0
convenience	1	1	1	7	1	1	0	0
information purposes only	9	0	0	0	0	0	0	
sentimental & aesthetic	0	1	0	0	0	3	0	0
storage	0	0	0	0	0	1	0	0
religious reasons	0	0	0	1	0	0	0	0
expensive & irreplaceable	2	1	0	1	0	0	0	0

SPECIAL OBJECTS - LIVING-ROOM GENOTYPE	furniture (1)	electrical goods (1)	cooking utensils (1)	cars/bikes (1)	cooker (1)
utility	9	0	4	0	3
convenience	0	1	0	4	1
enjoyment & relaxation	1	1	1	0	0
expensive & irreplaceable	0	3	0	0	0

SPECIAL OBJECTS - DL-CORRIDOR (SEGREGATED KITCHEN) GENOTYPE	electrical goods (1)	furniture (1)	fan & clock (1)	food (1)	cooking utensils (1)	fridge/freezer (1)	books & documents (2)
utility	4	9	1	9	8	3	3
information purposes only	18	1	0	0	0	0	2
enjoyment & information	0	0	8	0	0	0	0
enjoyment & relaxation	4	4	0	0	0	0	0
convenience	3	0	0	0	0	0	0

Note: self-related reasons are highlighted in blue.
no. 1: - denotes Action objects
no. 2: - denotes Contemplation objects
at least 5% of responses
less than 1% of total responses

Information was most clearly identified with electronic goods- t.v., radio, stereo as opposed to books or newspapers, but the majority rely more on the t.v and radio for information, because not everyone can read or afford to buy a newspaper everyday. Books on the other hand were described most in terms of utility (education & learning).

At least nine objects evoked special feelings mainly because of their **convenience**, and this seems to be about ease of accessibility. For instance, not many households had a fridge/freezer but, the absence of a fridge/freezer does not mean food cannot be stored, only that it hampers the scale of bulk purchases of perishables. Having access to the fridge/freezer therefore made bulk purchases convenient. Only 7% of the special objects evoked feelings of **enjoyment** although this increases when the category where respondents emphasised both usefulness and enjoyment is taken into consideration. The object category that typifies this meaning best is electronic goods, but six other object categories were mentioned in relation to enjoyment- electronic goods, food, cooker, clothing, furniture, cooking utensils, phone & guitar.

Religious reasons were given in about only 5% of the responses and over 70% are related to obvious religious items, but in comparison, more respondents considered religious activities to be important to them. Religious icons constitute a small aspect of the expression of many religious beliefs. Objects such as the car, fridge, clothing, and water, which are not necessarily religious icons were identified with facilitating the practice of religion for example, the car is handy for going to places of worship, and water is important for ablutions in Islamic religion[80].

Sentiment & aesthetics were mentioned in 4% of the responses, mainly in relation to clothing. Richins (1994) suggests that possessions related to the person that are also usually on display are more likely to be identified with status. As such, clothing is a is

[80]The Catholic and Orthodox Churches place more emphaisis on the use of religious iconography, but the Orthodox Church is practically non-existent in Nigeria

logical choice to associate with aesthetics & sentiment. Other items valued for sentimental reasons were books, certificates, wall clocks, and electrical appliances, whilst objects such as electronic goods, pictures and artwork embody both sentiment and aesthetics. The decision was taken to include all forms of family photographs or portraits, prints of paintings and sculpture as artwork without applying any artistic judgement. Many of the prints are not worth much although the majority of the sculptures are from local artists and in a few cases from artists of regional or national renown. Admittedly this is a very brief foray but sentiment and aesthetic considerations did not feature very strongly in this sample.

A similar number of responses dealt with **the expensive and irreplaceable** nature of certain domestic objects. This feeling was very strongly evoked by electronic goods for about half the number of respondents who mentioned this meaning category, as well as other objects such as cars/motorbikes (1 respondent), Clothing (2 respondents), books and documents (2 respondents), crockery (1 respondent), standing fan/wall clock (1 respondent) and jewellery (1 respondent). It is surprising that only a few respondents mentioned jewellery, cars, and valuable crockery as these objects are obviously expensive, but references to the expense and irreplaceable nature of objects are also infused with a lot of private meanings. Although jewellery, large iron pots, and expensive crockery were traditionally valued by Yoruba women, the current economic situation in Nigeria makes it difficult to amass them, and quite a few respondents commented that they could not afford expensive jewellery. This partly explains the small number of respondents who mentioned status, and is an example of changes enforced by the economic situation.

About 3% of the respondents mentioned **storage needs** as one of the reasons for considering religious items, clothing, furniture and portable water to be special. Portable water in particular is valuable because it is time and energy consuming, requires replenishing, and needs to be well stored and its use carefully monitored.

Most of the special objects described by the respondents like the important activities, seem to reflect more aspects of public meanings although as stated before, private meanings also contain aspects of public meaning since meaning is also about the recognition of these meanings by others. Nevertheless some objects were more varied and seemed to be better 'carriers' of more private meanings (electrical goods, furniture, clothing, fridge/freezer, books & documents, and pictures & artwork) suggested by the range of meanings/reasons used in describing these objects. Objects such as food, cooking utensils, cooker, and portable water on the other hand, seemed strongly bound within the realm of public meaning, based on the relative homogeneity of the reasons attributed to the objects. Secondly, more educated and financially secure respondents showed a slightly higher tendency to attribute more private meanings to activities than less educated lower income respondents. The dichotomy in meanings attributed to objects, primarily along educational lines alludes to the existence of different habitus, or at least with regards to the ability to articulate concepts.

8.2.1.2 Objects, socio-economic, gender and generational differences

No specific variable, that is, age, gender, income, and education, explained the boundaries in the meanings of these objects. Each seemed to represent a type of difference between the object meanings obtained from the four sample areas. The strongest correlation was

between special objects mentioned in the different areas, and this seems to be an overlay of the more modest differences resulting from the variables above, and other effects. This included how homeowners and tenants respond differently to their environment, spatial differences in the types of units, varying levels of infrastructure in each geographic area, and the effect of different dispositions, and values as reflected in the difference between the list of special objects in the Orowa genotype, and the rest of the sample.

The main difference in relation to income and educational levels was that respondents in the middle income group who were university/college graduates made most of the references to convenience of certain objects which was less of a concern to many respondents in poorer accommodation and area. There was a slight increase in the exploration of private meanings with increased educational levels, but this is offset by the overall similarities in the choice of objects that were considered special. Five object categories were considered special more by women than men, even after adjusting for the 40:60 male/female split in the sample: - portable water containers, the cooker, religious items, fridge, and fan & clock; mostly objects connected with cooking or other chores apart for the religious items. Clothing, cars & bikes, books & documents, and retail goods showed a distinct male bias though not an overwhelming one.

There were minor differences in the meanings attached to some special objects in relation to age differences but again this were not strong correlations [Chi-square P value (.4571)]. All age groups mentioned electrical goods, furniture, clothing, cooking utensils and food the most, with only minor differences. The few points of difference were that older folk mentioned religious items most, compared to the youngest age group and unsurprisingly in the light of previous discussion, retail goods were considered special more by those over 45 year olds.

In terms of the meaning classes, enjoyment, the combined category of enjoyment & information, emphasis on family unity, and storage, show little variation. Sentiment & aesthetic reasons and ventilation were mentioned the most by the youngest age group (15-24yr olds) and not at all by those over 45yr olds. Although few mentioned status and value of family heirloom, there was little variation in all age groups (see Table 8-15).

Table 8-15: frequency of special objects based on age[81]

Categories of Reasons	Age15 - 24yrs	%tage	Age 25 - 34yrs	%tage	Age 35 - 44yrs	%tage	Over 45yrs	%tage
electrical goods	16	16.2%	33	28.7%	31	24.8%	18	20.0%
furniture	19	19.2%	16	13.9%	19	15.2%	13	14.4%
clothing	11	11.1%	10	8.7%	9	7.2%	7	7.8%
food	6	6.1%	7	6.1%	7	5.6%	12	13.3%
cooking utensils	7	7.1%	6	5.2%	10	8.0%	6	6.7%
fridge/freezer	4	4.0%	9	7.8%	7	5.6%	3	3.3%
cooker	9	9.1%	5	4.3%	4	3.2%	5	5.6%
car/bike	5	5.1%	6	5.2%	6	4.8%	4	4.4%
religious items	2	2.0%	6	5.2%	6	4.8%	4	4.4%
fan & clock	6	6.1%	6	5.2%	6	4.8%	0	0.0%
bks&documents	5	5.1%	3	2.6%	7	5.6%	1	1.1%
crockery	3	3.0%	1	0.9%	0	0.0%	2	2.2%
retail goods	0	0.0%	1	0.9%	1	0.8%	4	4.4%
iron&elec. Appliances	2	2.0%	2	1.7%	0	0.0%	0	0.0%
pictures & artwork	0	0.0%	0	0.0%	3	2.4%	0	0.0%
phone & guitar	1	1.0%	1	0.9%	0	0.0%	0	0.0%
jewellry	0	0.0%	0	0.0%	1	0.8%	0	0.0%
other-port. Water etc	3	3.0%	3	2.6%	8	6.4%	11	12.2%
Total count	99		115		125		90	

Table 8-16: frequency of meanings of special objects based on age [81]

Categories of Reasons	Age15 - 24yrs	percentage	Age 25 - 34yrs	percentage	Age 35 - 44yrs	percentage	Over 45yrs	percentage
utility	45	48.9%	36	35.3%	43	37.7%	44	51.2%
enjoyment	7	7.6%	11	10.8%	9	7.9%	5	5.8%
family unity	2	2.2%	1	1.0%	0	0.0%	2	2.3%
information	7	7.6%	10	9.8%	15	13.2%	10	11.6%
convenience	6	6.5%	13	12.7%	12	10.5%	5	5.8%
religious	2	2.2%	7	6.9%	6	5.3%	5	5.8%
expensive&irreplacable	2	2.2%	6	5.9%	5	4.4%	1	1.2%
sentiment&aesthetic	8	8.7%	1	1.0%	8	7.0%	0	0.0%
income generating	0	0.0%	4	3.9%	3	2.6%	4	4.7%
storage	3	3.3%	3	2.9%	3	2.6%	5	5.8%
enjoymt&information	4	4.3%	5	4.9%	4	3.5%	3	3.5%
ventilation	5	5.4%	4	3.9%	2	1.8%	1	1.2%
other-status,heirloom etc	1	1.1%	1	1.0%	4	3.5%	1	1.2%
Total	92		102		114		86	

[81] Note: Objects mostly described with non-self related reasons are highlighted in blue.

There were some interesting points in relation to gender differences. Two non-person meaning classes that showed a marked gender variation once the difference in the ratio of males to females in the sample is taken into account is utility, which is more of a female focus (ratio 1.8: 1), and information which was more of a male concern (ratio 1.68: 1), see Table 8-18, p310. The other non-person related reasons- convenience, religious reasons, and expensive and irreplaceable, income generating, storage and ventilation showed little gender variation. There is even less variation with the person-related classes although most show a very slight bias towards women, apart from the status value of objects which shows a slight male bias. Only sentiment and aesthetic was more male biased, though this constituted a small fraction of the reasons. Overall, there was only a slight male bias in naming clothing and vehicles as special objects, and a small female bias towards portable water, and the cooker.

Table 8-17: Frequency of special objects based on gender[81]

Objects	Male	%tage	Female	%tage
electrical goods	42	24.9%	57	21.4%
furniture	25	14.8%	44	16.5%
clothing	19	11.2%	18	6.8%
food	11	6.5%	21	7.9%
cooking utensils	11	6.5%	20	7.5%
other-port. Water etc	6	3.6%	19	7.1%
fridge/freezer	7	4.1%	17	6.4%
cooker	6	3.6%	17	6.4%
car/bike	11	6.5%	10	3.8%
religious items	5	3.0%	13	4.9%
fan & clock	3	1.8%	15	5.6%
bks&documents	10	5.9%	6	2.3%
crockery	3	1.8%	3	1.1%
retail goods	4	2.4%	2	0.8%
iron&elec. Appliances	2	1.2%	2	0.8%
pictures & artwork	3	1.8%	0	0.0%
phone & guitar	1	0.6%	1	0.4%
jewellry	0	0.0%	1	0.4%
Total count	169		266	

[81] Note: objects identified mostly with non-self related reasons are highlighted in blue)

Table 8-18: Reasons for special nature of objects based on gender

Reasons	Male	percentage	Female	percentage
utility	61	38.9%	113	46.7%
enjoyment	11	7.0%	21	8.7%
family unity	2	1.3%	3	1.2%
information	22	14.0%	20	8.3%
convenience	17	10.8%	19	7.9%
religious	7	4.5%	13	5.4%
expensive&irreplacable	4	2.5%	9	3.7%
sentiment&aesthetic	10	6.4%	7	2.9%
income generating	5	3.2%	6	2.5%
storage	4	2.5%	10	4.1%
enjoymt&information	5	3.2%	11	4.5%
ventilation	4	2.5%	8	3.3%
other-status,heirloom etc	5	3.2%	2	0.8%
Total	157		242	

8.2.1.3 Private and Public Meanings in Special Objects

Only a few of the objects seemed to facilitate the exploration of more private meanings over the orientation towards social integration with the external community. Dittmar (1992) states that the change in western countries from pre-industrial to industrial also marked the move from ascribed identity to achieved identity, that is bearing signification that has been invested upon the objects, by the individual subject, as opposed to its intrinsic properties. Elements of both seem to be embedded in the results of this research, moreso the ascribed identity through the extended family.

The growth of achieved identity with the explosion of the bourgeois middle class does not seem to be fully developed in the Yoruba elite middle class represented in this sample, but in any event, Dittmar (1992) identifies that this is usually a gradual transformation from the traditional emphasis on objects as representation of interpersonal and intrapersonal views on to a newer emphasis on possessions as symbols of identity at the personal level

and it is likely to be an ongoing process. The focus on self-related meanings for important activities in this research, as discussed previously, was more based on attributes of the extended self. This is probably because identity within the group is very important in the culture and obligations to the group often override individual needs. A summary of how the special objects were portrayed is given in Table 8-19.

Table 8-19: Special objects description

Objects closer to Public meanings	**Objects closer to Private meanings**	**Objects with a combination of Private and Public Meanings**
Food (utility and convenience)	**Fridge** (utility, and enjoyment)	**Electronic gadgets** (enjoyment and information and expensive, convenience, status, utility)
Cars/bikes (convenience and religious)	**Iron & electrical appliance** (utility, and convenience and sentiment / aesthetics)	**Clothing** (utility, and sentiment/aesthetics)
Cooking utensils (utility and convenience)		**Portable water** (utility, and income generating, and storage)
Retails goods (income generating)		**Regular use furniture** (utility, and enjoyment and expensive/ irreplaceable)
Cooker ((utility and convenience)		**Pictures & artwork** (sentiment/ aesthetics and income generating)
Books (utility and information)		**Phone and guitar** (enjoyment)
Jewellery ((expensive & irreplaceable)		**Fan & clock** (ventilation and utility, expensive, sentiment)
Crockery (utility, expensive & irreplaceable)		
Worship objects (religious purpose and the need for proper storage for it)		

Of the qualities that can be embedded in object meanings identified by Csikzentmihalyi and Rochberg-Halton (1981), A) mediation of conflicts within self, B) qualities of self, C) expression of aspirations, D) signs of status, and E) symbols of social integration, the most prominent in the sample were point E, and to a lesser extent, B, and D.

8.2.2 Summary: - Object and Activity Meanings

The mapping of the domestic spaces in terms of task orientation and agent participation revealed that the Yoruba home was more orientated towards fostering the group as opposed to the individual. Chore related activities dominated many of the space labels, and the Yoruba domestic dwelling is more of a workplace for women, and more of a relaxing place for men, but this was affected by age, as the younger members of the household were expected to participate in chores.

There were some differences across genotypes, particularly in relation to whether the accommodation was shared or self-contained, but generally the Yoruba domestic spaces are more outward focussed, with productive work featuring in many dwellings and serving as a link with the community, although this was more pronounced in the poorer, shared accommodations. Improved education and income levels affected the way the genotypes are used in that, the more financially secure educated households in the genotypes with a bigger functional core, reflected slightly stronger spatial demarcations between work and leisure.

Privacy in general is less defined by individual privacy, which is imprinted spatially, but by the separation of activities which are private either by restricting them to a specific space such as the case of bathing and toileting, or by temporal separation, as in the case where sleeping and dressing up takes place in a non-specialised space. This is most evident in the traditional, and in other forms of shared accommodation.

Meanings attributed to objects and activities in the study showed a strong tendency towards functionality over symbolism, and also a tendency towards public definitions of meanings. The strong emphasis on utility, is quite noticeable compared to the results of other studies like Csikzentmihalyi and Rochberg-Halton (1981); and Richins (1994a).

However, this is not to downplay the validity of the results of this study because as Kleine and Baker (2004) noted, possessions do not have to be expensive or exotic to become objects of attachment and most domestic objects are of the mundane variety and remain important or special to many. Richins (1994a) also stated that special objects can sometimes be simply functional as indeed all the studies on special objects have identified that object meaning have a utilitarian dimension.

This may be due to the idea suggested by Belk (1988) that; being part of a culture that has more access to material consumer goods may be linked to increased investment of personal attachment to objects- a hypothesis supported by Dittmar (1992), and Kleine and Baker (2004). What was distinct in this study was that some activities (e.g. hosting social events, religious activities, guest entertainment/ relaxation, eating) rather than objects, were defined in more symbolic, self-related terms by many respondents who focussed on their ability to engender solidarities beyond the household. Activities seemed to serve a more dynamic role of integrating the household with other kin and the wider Yoruba community, than objects. This is most likely a reflection of the strong emphasis in traditional Yoruba culture on non-tangible 'assets' such as the extended family, children, than on material possessions as potent symbols of wealth and accomplishment.

The attribution of more symbolic meanings to social events, is weaker than what used to occur in the traditional context, because of the reduced importance of the extended family. Nonetheless, the symbolic value of social events remains of importance in contemporary nuclear families, where personal wealth and material acquisition is more obviously attached to individuals, and can be used to emphasise ones social importance.

The list of important activities also shows a predominance of household and group activities over individual ones and the reasons attributed to some of the household and

group activities is divided between their functional role and their integrative qualities. Although the correlation between special objects and generation differences was not significant, interests in income generating aspects, religion, and religious objects were more important to the older age groups, while sentiment, aesthetics and concerns about environmental aspects were more important to the younger generation. Also, sentiment or memories featured significantly less in this sample compared to the list of special objects by Csikzentmihalyi and Rochberg-Halton (1981; Richins (1994a; 1994b).

Distinctions based on gender were not striking in this sample, similar to Richins (1994b) findings but there were a few distinct features. Women focussed more on utility and men focused slightly more on information, sentiment and enjoyment. More women mentioned portable water containers, the cooker, religious items, fridge, and fan & clock as special objects to them- a few which are connected with cooking or other chores. While Wallendorf and Arnold's (1988) study on Niger, West Africa noted that women are more likely to attribute non-person reasons to their objects, but this was not strictly the case in this study, as both male and female responses focussed more on non-self related meanings for their special objects. Generally, income levels increased with increase in educational capital, both had some impact in defining boundaries between patterns of space use, while generation gap, and gender differences influenced aspects of space use, particularly task orientation. Meanings were more driven by the interplay between a number of variables over a given aspect of space use, and meaning, than by a single variable.

Finally, although identical domestic spaces can be used by different households in slightly different ways in terms of activity and object disposition in space, on analysis, we see that standard continuties exist in activity and objects locations in each space label.

The examples of identical floor plans occupied by four different household show this surface variety quite well in Figure 8-4 p315. There remains a strong vein of continuity in the sample across these socio-economic and spatial variables, paralleled by similarities in elements of the spatial identities. These are reflected in the general pervasiveness of household and extended activities in the sample, and in the weak social rules controlling visitor access to spaces, though there is increased individual privacy and mapping of privacy as an attribute of space rather than of activity. The self-contained dwellings of the middle classes, and consistencies in the meanings attached to domestic objects and activities, transcended many of the variables itemised above. The core social characteristics of space use in the genotypes are summarised overleaf.

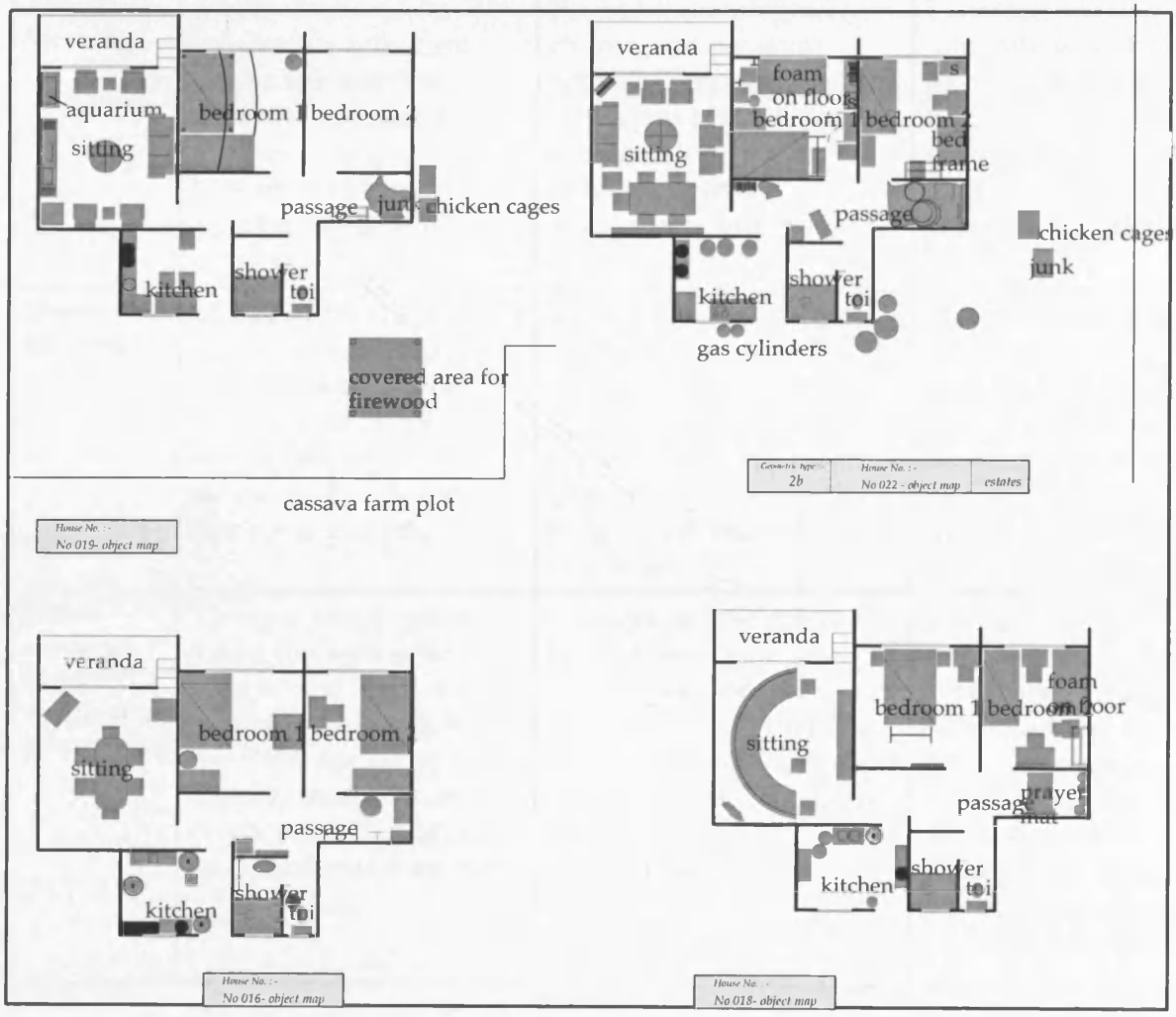


Figure 8-4: Same plan, different layouts, and similar contents in four households

8.2.1.4 Summary of the Genotypes Social Characteristics

SUMMARY	OLDER GENOTYPES OROWA AND DL-CORRIDOR (SEGREGATED FUNCTION SPACES TYPE)	NEWER GENOTYPES 1) LIVING -ROOM, 2) SL-CORRIDOR (INT. KITCHEN), 3) DL-CORRIDOR (INT. KITCHEN)	ENDURING GENOTYPES DL-CORRIDOR (SEG. KITCHEN) TYPE.
Agent Participation	Integrative, rather than individual focus. Many spaces have a mixed character.	Integrative, but with more emphasis on individual needs. Slightly fewer spaces have a mixed character, than old types	Integrative, rather than individual focus. Many spaces with mixed character.
Task Orientation	Most spaces are dominated by chore-orientated activities. Hardly any leisure-based space	Many spaces are dominated by chore-orientated activities. A few more leisure-based space occur, than in the older genotypes	Most spaces are dominated by chore-orientated activities. Few leisure-based spaces
Activity Meaning	Mostly focussed on integrative activities: - typical important activities are religious activity, eating, hosting social events, entertaining guests, cooking	Focussed on integrative, chores, and pleasure activities: typical important activities are eating, social events, religious activity, entertaining guests, sleeping.	Focussed on integrative, and pleasure activities: typical important activities are eating, religious activity, entertaining guests.
Object Meaning	More utilitarian. Wider choice of objects in the Orowa genotype. Typical special objects are clothes, furniture, religious objects, food, electronic gadgets.	More utilitarian. Wider choice of objects in the SL-corridor genotype only. Typical special objects are furniture, electronic gadgets, clothes, fridge/freezer, cooking appliances.	More utilitarian. Wide choice of objects. Typical special objects are furniture, electronic gadgets, fan and clock.
Effects of social variables of age, and gender.	Younger people more tuned towards action objects, and focussed more on chores, than the older age groups. Women more focussed on chores and cooking related objects than men.	Younger people more tuned towards action objects, and focussed more on chores, than the older age groups. Women more focussed on chores and cooking related objects than men.	Younger people more tuned towards action objects, and focussed more on chores, than the older age groups. Women more focussed on chores and cooking related objects than men.

Chapter 9: Discussion of Findings and Conclusions

The chapter discusses the findings of chapters five, six, and seven in the light of the main research questions. It focuses on the spatial and configurational patterns identified, the socio-economic and lifestyle patterns that these seem to relate to, and how these correlate to each other. Secondly, the discussion looks into the meanings and rules that were identified in chapter seven and eight as underpining how Yoruba domestic life operates and how these reflect lifestyle and conceptual differences.

The conclusions, are outlined in terms of its spatial, syntactic, and meaning implications, and how they help advance our understanding of traditional and contemporary Yoruba domestic life, and offers suggestions as to how these may be further explored in future research.

9.1 Summary of Research Questions

The focus of the main research question is on the degree of consonance that exists between lifestyle patterns, and in spatial and space use patterns in Yoruba domestic space morphology. Also, the thesis addresses the question of the effect of time on the development of Yoruba domestic space- is there a persistence of key morphological features, or major transformations of spatial types?

In order to understand the link between spatial patterns and lifestyle patterns, it was necessary to analyse how values and ideals are manifested in the meanings that underpin everyday space use, and how social and spatial rules are invoked in space use. Three questions were addressed in relation to meaning and rules: - a) what are the social rules that govern the activity and object patterns that were identified in the spatial types? b) how does the domestic space operate in terms of being a place of leisure or of work (task orientation), and in terms of the experiences of different categories of inhabitants who participate in various activities (agent participation)? c) What is the household's relationship to their domestic world of objects and activities, and do these relastionships to objects and activities reflect distinct lifestyle differences?

The analytic process involved the following: - Firstly, the configurational types that exist within the sample were identified based on the criteria outlined in chapter 6. Six geometric types and six genotypes were found which accounted for over 90% of the total sample. Following on from this is whether the differences in spatial configuration and space use, reflect differences in social conditions and lifestyle differences. A summary of their core spatial and syntactic characteristics are given in section 9.1.2.

The second set of analysis related to space use and to meaning. The conventional pattern of objects' and activities' locations, were identified, and respondents were asked in the interview to explore the importance and special nature of the realm of domestic activities and objects. This inquiry related directly to the need to ascertain if the correlations identified are fuelled by social differences, or merely reflect infrastrutural shortcomings.

It is worth reiterating the main theoretical suppositions that this thesis adopted. Firstly is the proposition that social space is not independent of physical space. Bounded spaces, by virtue of how they are linked to each other have the ability to increase or decrease the status of any activity or objects found in them, and this can be expressed in the private and also in the public meanings attached to the objects/activities. Secondly, new (spatial) types rarely result in the total obliteration of the old, and the reminants of the old can often be found melded in with the new. A summary of the spatial, syntactic and social core characteristics is given below, and this is followed by the discussion of the findings, organised in sections based on the four questions outlined above.

9.1.1 Core lifestyle elements in summary

Each sample area has a distinct socio-economic and spatial identity. Enuwa traditional core was typified by the family compounds and houses, predominantly the Orowa genotype. Most of the Enuwa households were low-income earners, and owner-occupiers (via inheritance), and almost a quarter of respondents had no formal schooling. Akarabata was the most homogeneous in terms of dwelling types, comprising mainly rented tenements, and typified by lower income households with the majority only having primary school education. The Akarabata sample was dominated by the DL-corridor (seg. kitchen) genotype (the enduring genotype). The Campus, and the Estates are all rented houses and flats, comprised mostly of the SL-corridor (int kitchen), and Living-room genotypes. The campus and estates had the highest proportion of higher income earners and respondents with tertiary education, and had better infrastructures (water, electricity supply, and building structure). The total sample comprised of 65% rented and 35% owner-occupied accommodation, with almost a 50:50 split between self-contained and shared accommodations.

There has been a fundamental transitioning from the traditional society with its extended family focus and mainly agrarian based households living in traditional family compounds, to a more nuclear family-based domestic life focussed within a modern waged economy who live in a mix of new housing types that are mostly single-household dwellings. Nonetheless, multi-household accommodations continue to be required for low-income workers, creating three categories of accommodation- a) multi-households of related families (traditional), b) multi-households of non-related families (the tenements) and the c) single-household dwellings of the educated professional families. As mentioned earlier, the main social element to emerge in the post-colonial

period, which fuelled the popularity of self-contained dwellings, was the educated middle class, largely driven by increased levels of participation in tertiary education. Exposure to norms from other cultures as such has largely fed in via this middle class, through an education system that relies on foreign texts, media, and educational opportunities abroad.

The consequence of these factors was a gradual infiltration of the new ideals, which often generated a desire for housing that embodied the new ideals. But it is the increase in earning power that often accompanies high levels of education in Nigeria, that made the new houses accessible. The effects of these social changes are also quite visible in the increase in the material artefacts present in the newer genotypes as a result of the expanding economy and aspirations. New objects such as chinaware, kitchen applicances, radios, televisions and cars became standard in new households, with the emergence of new activities and 'needs'.

The Traditional Families mostly live in the owner-occupied Orowa genotypes, and utilise outdoor spaces quite significantly for household chores such as laundry, food processing, cooking, retail activities, outdoor toilets and bathroom, and rearing animals, although animals quite often are brought into the orowa. The communal space (orowa) also provides storage for many everyday objects including storing water in plastic containers and vats, which are essential for many household chores. The central corridor in the DL-corridor (seg.function spaces) genotype which was also occupied by the traditional familes is also used in a similar manner to the orowa, because it is also mainly a multi-household dwelling. The bedroom contains all personal effects, but comprises a less varied object array in comparison to the working clerical households who live in genotypes dominated

by the tenements, whereby accommodation is shared with non-related households, hence all manners of domestic objects are stored in the bedrooms/parlours. The object array size and variety is focussed on the orowa/corridor and the bedrooms in the older genotypes, but the size of the object array in these traditional homes is smaller in comparison to the educated middle income households in the newer genotypes.

The educated professional middle class: - There are distinct differences in lifestyle practices between the educated middle class and the traditional households, whilst many continuing elements exist. The educated, nuclear family households place a premium on not having to share facilities, and can afford to do so. The object arrays in the newer genotypes reflect the fact that the dwellings are self-contained, hence the contents of the living room, bedroom and corridor are often 'purer' containing significantly fewer cooking-related objects. The corridor for example, is mainly for circulation and storage, and less of an activity space in comparison with the older genotypes, and the enduring genotype, which contained many tenements. The main distinction between the old and the new way of living is in a greater emphasis on a distinction between the living areas and the sleeping areas, despite the fact that the new genotypes are already single-household dwellings.

The use of outdoors spaces for chores, like laundry, rearing animals continues in contemporary housing, though on a smaller scale as the bathroom with its pipe-borne water is an alternative to doing the laundry outdoors, although many continue to do this outdoors, since laundry is almost always hung outside to dry. Retail activities were also found in these households, although fewer operated out of their single-household dwellings. Renting shops in the commercial sector was more common, and the home becomes a transit place for retail goods en-route to the shops.

Many chores continue to be conducted in the same way in the old and the new, mainly in relation to cooking, laundry and housework (dusting and cleaning). Handwashing is the norm, and sweeping with a broom and pan is common. In addition, food processing methods are often done in the traditional way involving a lot of peeling, cutting, sieving or grating and often also done outdoors, though there is the option to use the kitchen. This is most likely because such activities are messy, and the effluence and messiness can more easily be disposed/cleaned outdoors. Also, the floor space in many kitchens is usually not sufficient to spread out several bowls, trays, etc since middle class households can also afford to buy in bulk. Culinary practises such as the mixing of hard-dough starchy meals continue in both the old and the new, and similar practises such as sitting down on the low stool (apoti) to carry out many of the drawn out food processes occurs in both the traditional and the educated middle class families. This is despite the fact that middle class families have access to some labour saving devices e.g. blenders, mixers, because food processing is always in bulk, and many of these appliances can only handle small quantities.

The clerical, low income households by virtue of the fact that they have some education, find themselves in a bridging situation, between the traditional and the educated middle classes. They are almost always renters, by virtue of the fact that they often live away from the town of birth, to take up clerical, and other blue collar waged work, but can also continue to lay claim to part ownership of their own family houses in their home towns. Similar to the traditional households, they live in multi-household dwellings but, without the advantage of sharing with relatives, as is the case in the Orowa genotype, whilst also lacking full control over the shared service and circulation areas. Some lifestyle and space use practices common amongst this group are a direct result of

infrastural shortcomings, e.g using the corridor for cooking activities, storage of water and fuel (similar to the orowa), and using the bedroom for storage of food and other cooking-related paraphenalia. Other practises such as culinary practises, the presence of retail activities, less emphasisied individual privacy, and the use of outdoor spaces for several activities are common to the three household types. Few in this group use outdoor spaces for storage, probably, because they cannot build sheds without their landlord's permission and the fact that those they share with are not necessarily friends, although in more stable tenements, quite a few of the households do interact.

In conclusion, the main area of difference lies in the conceptual realm about privacy, which leads to an increased value on spatial control. Many domestic chores continue in similar ways, and the use of outdoors remains of value across household types.

9.1.2 Core spatial and syntactic characteristics in summary

As mentioned previously, there are strong correlations between geometry and genotype, and most genotypes were dominated by just one or two shape geometries, and also closely identified with a particular socio-economic group. The older areas had marginally more genotypes but each of the four areas was strongly dominated by one or two genotypes and also similarly by a few geometric types, particularly Akarabata. The Orowa genotype contained almost only shared and owner-occupied accommodations and was restricted to Enuwa, while the was found only in Akarabata and Enuwa, and is a predominantly tenement (double-loaded corridor) geometric type. The presence of some of the DL-corridor (seg. function spaces) type, (and of the enduring genotype [DL-

corridor (seg. kitchen) type] in Enuwa with their double-loaded corridor geometries, and the absence of the orowa space shows that these stocks were subsequently introduced to the area. At the other end of the spectrum, we find that all the examples of the predominantly self-contained, rented SL-corridor, and Living-room genotypes bar two cases, were only found in the recently developed areas (Estates and Campus). Only the enduring genotype and the DL-corridor (int. kitchen) genotype, occurred in both the older and newer neighbourhoods, although mostly in the older areas. These were mostly shared units. The middle class housing in the Estates, which are primarily for-profit units, comprised mainly of compact plans expressed in the enduring and newer genotypes, but similar middle class houses on the Campus were mostly elongated, compact, and mixed geometric plans dominantly expressed in the enduring genotype and in the SL-corridor genotype.

Syntactically, there was a decrease in the mean integration from the old to the newer genotypes with the enduring genotype in-between, and an opposing pattern with mean step depth. This was in tandem with a shift from Function-integrated genotypes mainly in the old town core to Transition-integrated genotypes in the Akarabata, Campus and Estates, although space use in the transition-integrated genotype in Akarabata was more akin to the Orowa genotype, and one Function-integrated genotype occured in the newer area, but the integration focus there was on the living room. The three genotypes common to the lower socio-economic groups performed poorly on the geometric criteria, mainly in relation to clear separation of sectors and the use of transition spaces to organise the genotypes, both which impact perceptions of privacy.

Finally, the bedroom remains a dead-end, A-space in all genotypes , but the living room and kitchen, have become more of C-spaces, marking another important difference between the older and newer genotypes. This change is also demonstrated in the increased integration of the living room and kitchen in the newer genotypes. As it is, many of the spatial and syntactic core characteristics remain enduring, indicating that they do so, to support a continuity in lifestyles, whilst there are also points of difference, which indicate different lifestyle requirements. The next section is a discuss about this fit between spatial patterns and the main lifestyle choices outlined in section 9.1.1.

9.1.3 The degree of consonance between Lifestyles, and Spatial patterns

How do the core spatial and syntactical elements engender, or hinder core lifestyle elements? There is a strong correlation between geometry and genotype, and geographic location, but this is actually about socio-economic patterning because most of the areas are relatively socially homogeneous, although income levels are not strictly defined by area. There is some social mixing in the Campus sample which houses average income clerical staff most of whom only have secondary level education, as well as the university lecturers and professors. Although each sample area is strongly identified with one or two genotypes, each genotype comprised of at least a couple of geometric types. The most enduring is the DL-corridor (seg. kitchen) genotype, bridging periods of construction and areas, suggesting that its inequality genotype is quite fundamental, that is, how well connected each of the core space labels are, in relation to all other spaces in the dwelling. The genotype underlined below is embedded in varied geometry (five geometries) and a mix of shared and self-contained units (18 self-contained and 34 shared).

(most integrated) Corridor > Living room > Bedroom > Kitchen > Bathroom (most segregated)

9.1.3.1 Syntactic performance and lifestyle requirements

a) Effect of changes in mean integration and depth: - Syntactically, the decrease in mean integration and an increase in mean step depth, from the older and intermediate genotypes to the new genotypes with the enduring genotype in-between, was socially required. The deeper genotypes occupied by educated middle-income households allow separation between the reception areas and the sleeping (private) areas, a finding that is consistent with several studies. This was also engendered by the shift from the function-integrated model of the Orowa genotype to mostly transition integrated genotypes in the newer areas. The modest increase in ringiness in newer genotypes introduces a flexibility in the floor plans, which is useful in tenement plans in the enduring genotype, where adjoining rooms are used by different households, and different combinations of room suites can be acheived, whilst retaining the option to revert back to the original choice. The rings can be taken out of operation by locking connecting doors.

b) Differences in terms of the nature of the spaces, whether the space is dead-end or on a sequence of rooms as mentioned earlier, reflects a shift in relationships or status accorded to some of the core space labels. This is expressed in the living room and moreso the kitchen, with their increased integration and increased tendency to have more than one connection or to be on a ring in newer genotypes. This suggests, particularly for the kitchen, a slightly increased socialisation of the activities it contains, that is absent from the tenements where kitchens are evidently service spaces, but far from the traditional setting where cooking takes place in the orowa, the main socialising space.

It is suggested that the increased connection of the kitchen in the domestic space is partly derived from an increased status of the users of the space, and more equitable

gender definition of task roles in the domestic domain. It is also partly influenced by the incorporation of pipe-borne water and drainage, which makes it more convenient to bring the kitchen to the core part of the home as opposed to being on the periphery (or at the back of house). It must be said though that the kitchen in the middle class and tenement households, remains a service space and is far from being a socialising space as may be found in many homes in the U.K, perhaps because the perception of what the kitchen is has not moved too far from the idea of the kitchen as 'service' for the life of the household. The object and activity array of the kitchen, which features predominantly household chores across the genotypes confirms this (see Figure 7-17, p237).

The living room has become more central to the life of the household rather than just be a space use by the family head as is the case of the living room in the older genotype. This is consistent with other studies like Amorim (2001), but not necessarily an evolutionary trend. The bedroom on the other hand shows a consistency in being a dead-end space because the inherent qualities of its main activity (sleeping/dressing/sexual intimacies) remain quite unchanged. In fact the bedroom is deeper in the domestic complexes in newer genotypes, in line with an expansion in values about privacy to incorporate a personal dimension as discussed previously.

9.1.3.2 Spatial performance and lifestyle requirements

c) Privacy and separation of sectors: - Spatially, the distinction between the geometry of shared and self-contained accommodation is strong, and is strongly dictated by the income as well as the educational and cultural capital. Well educated households in the main have the financial ability to 'buy' the privacy/separation from having to share spaces with other households, and this is reflected in a higher HR: mean number of cells

ratio for self-contained accommodation, in comparison to shared accommodations (HR: mean number of cells ratio for self-contained units = .300, and for shared accommodation = .203). Individual privacy is also enhanced in the new geometries via the increased number of bedrooms, and variety of space labels (note that the core space labels are larger in the new geometries popular with the middle classes). Still, income alone is not the main determinant of interest in household privacy, because financially secure households in the older areas have stuck to the shared accommodation (five of the six highest-income earners who live in Akarabata, and all the ten who live in Enuwa occupy shared accommodations).

Geometric performance also shows a marked difference from the older ones to the newer geometries, and this is also linked to the socio-economic indicators. In terms of the performance on the four criteria, we see a similar trend to that observed in Amorim (2001), and also in Heitor et. al., (2003) whereby they ascertained that differences in the performance on geometric concepts in the geometric/ shape grammars seemed to denote differences in socio-economic levels. In this sample this was still the case even after taking infrastructural shortcomings into consideration. Amorim (2001) and Heitor et. al., (2003) both noted that where sectors were well defined, spatial inconsistencies (that is clashes between inhabitant-visitor circulation, and in the activity patterns) were reduced, and spatial likeness was reinforced. The reduction of spatial inconsistencies was particularly enhanced when combined with the use of mediator (transition) spaces.

In addition, Amorim (2001) noted that the use of mediator spaces to separate sectors was more effective and central in his modern houses. This was also evident in this sample, with the orowa and double-loaded corridor geometries lacking the separation of sectors

apart from the service sectors which is seems to be the basic level of sector demarcation that was found in the sample, with little distinction in visitor and inhabitant circulation. The lack of mediator spaces in the older orowa type can be inferred from its T:F ratio which is the lowest in the sample, and as there is a general increase in the T:F ratio, which correlates with improved performance on the geometric criteria. Newer geometries particularly the two compact types having the highest T:F ratios (see Table 6-2, p146) and performed reasonably well on the four criteria, although the elongated plan which also performs highly on each criteria, actually has a lower T:F ratio, demonstrating that a few transition spaces can be carefully employed to demarcate between sectors. The newer geometries also perform better in separating the inhabitant and visitor circulation, and have a more elaborated threshold, which assists in keeping initial contact with non-inhabitants very shallow in the domestic space.

We can, therefore infer that definitions of individual privacy in the newer genotypes are more likely to be mapped spatially though also utilising temporal separation. Overall, the elongated type seems to be the most effective on the basis of its performance on the four criteria, because mediation is more effective between sectors, and in the two compact types, followed by the double-loaded corridor and the orowa type, and this correlates to socio-economic categorisations- the professional middle class, the blue-collar working class, and low income earners respectively.

All these factors result in an overall distinction in shape grammars as well. Three generic shape grammars are employed in the six types: - a) the compact (courtyard, and non-courtyard) models, b) the long corridor models (elongated and double-loaded) and c) the combination (mixed) model. In all, the genotypes prevalent in the lower

socio-economic groups are dominated by the long corridor models and the genotypes common to higher socio-economic groups are dominated by compact models, although the strong requirement for financial returns in the Estates make the non-courtyard type the preferred option, while the compact-courtyard is only in the Campus housing, which is a subsidised perk for the university staff.

9.1.3.3 The effect of perception on assessment of spatial and geometric performance: -

The results of asking the respondents about aspects of their homes that they liked or disliked, generated very few complaints about privacy particularly in the orowa geometric type. This suggests that there is little demand for this in extended family housing, and household privacy is perhaps seen along the lines of inside (extended family) versus outside (the community beyond), rather than within the household although in most instances each nuclear family have their own suite of rooms. There was little evidence of a highly developed concept of individual privacy in the spatial morphology of the orowa-type, and the double-loaded geometric types. Any concerns about individual privacy seemed to be developed mainly around bodily functions.

The lack of focus on individual privacy, or privacy as a spatial condition, in the double-loaded corridor geometric type is influenced by the fact that it contains two thirds of shared tenements and very few of its respondents made reference to the lack of privacy as a disliked aspect of their homes. It is possible that the lack of household privacy is partly condoned because it is not dissimilar to the shared lives that many would have experienced in the traditional dwellings of their parents, thereby forming part of a cultural capital.

The lack of concern about privacy in the orowa, and the double-loaded corridor geometries was part of an overall generous approach to assessing the performance of the dwellings (discussed in chapter five), despite the fact that better infrastructure, was only available to those with higher economic and educational positions. The way privacy, and other social and technological requirements of the dwelling are viewed, is closely linked to aspirations (and values), which Karlsson et. al., (2004) described as a subjective set of goals for achievement influenced by situation, that is, social class, education, culture and the individual's disposition. They identified a positive correlation between satisfaction with consumption of domestic luxury objects with increased economic ability, but a negative link with higher aspiration levels.

This research revealed a similar pattern, whereby respondents with comparatively basic accommodation (the orowa-type, and the double-loaded corridor geometric types) gave a high satisfaction rating to their accommodation. Those with better accommodation on the other hand, were more critical of their dwellings suggestive of higher expectations, though the owner-occupiers were also a bit more critical of their home. Many tenement dwellers have seemingly modified their aspirations to what is attainable, and have deferred higher aspirations until there is an improvement in their economic situation.

This coping mechanism; is a compromise between what is available and what is desired by resorting to *'making do'*, tactics, which according to Certeau (1984) is vital for the majority of routine domestic activities and an important means of circumventing the 'rules' that intrinsic (functional, social,) properties of an 'object' demand. The purpose of making do it is suggested, is to achieve what the household considers to be convenient, and is derived partly from what is socially acceptable, and from personal values.

9.1.4 Consonance between domestic space use and lifestyle patterns

a) Specialization of space: - While the differences in the syntax and geometries and spatial features are quite distinct, differences in space use patterns in the genotypes are less pronounced. Several spaces were found to be non-specialised- the orowa, living room, main bedroom, bedroom (including three core space labels). The toilet and bathroom were consistently specialised in all genotypes with somewhat similar object arrays in the self-contained units, and another set in the shared accommodations. Whilst the multi- versus mono-functionality dialectic is only partially achieved in this sample as a distinction between the older and newer genotypes, what was found is that, spaces in the Living-room genotype were even more specialised than the SL-corridor genotype for objects and activities. The locations of activities in the Living-room genotype seemed to be the normative convention for the middle classes, made possible because of a larger functional complex (or core space labels). Another point of similarity across the sample was the fact that much of the intensity of use for keeping objects in all the genotypes focussed on just a few spaces- living room and bedroom, or the orowa in the case of the Orowa genotype.

b) Syntactic banding of objects and activities: - The effect of the integration and depth structure on the objects and activities was not as pronounced as the result of Monteiro (1997) though still noticeable. The clear banding of groups of activities in terms of integration and depth in a manner relatively consistent with the classification system was less marked in this sample. In applying it to the domestic objects, we see that the key distinction between the location of certain objects were consideration about status, privacy, security as well the need to have certain objects on display. This imprecise banding of activities is generic to all the six genotypes, but the fact that there are

some differences across genotypes discussed in chapter 6, suggests that the process of mental classification which is argued by Tversky (2003) to be a necessary prelude to the assignment of objects or activities to a space label in the domestic space, is not based solely on intrinsic requirements, or social considerations of where is the rightful 'home' of any domestic object, but is affected by the constraints of each accommodations.

c) Convention of activity and object locations: - A case in point is that extensibility patterns of activities and objects show a significant number of activities with a wide extensibility that is consistent across genotypes, and some activities and objects have a very limited extensibility that is also consistent across the genotypes (electronic gadgets, fans, alcoholic beverages, valuables, portable lights, worship objects, medications). As such, the integration and depth patterns of this objects varied less across the genotypes. Logically, the objects and activities with the most varied extensibility across the genotypes also reflected the most variation in integration and depth patterns, but it is the consistent objects that confirm what are the enduring ways of using the domestic space at the most fundamental level. A comparison of the activity and object array of each space label in the sample reveals a constant point along which space label 'performance' differ- movement and use of space for storage. Some spaces were more prone to being used for the storage of several superfluous objects and involved lots of movement and retrieval of objects (e.g. orowa, living room corridor- see Figure 7-20, p239 in chapter seven in the total sample.

But there was a general reduction in extensibility in the DL-corridor (seg. function spaces), and the Living-room genotypes for many activities and objects, examples from the poorer and also a middle class area. The increased normative tendency of

the Living-room genotype is probably as a result of its larger material possessions, and larger functional complex. This is in contrast to the lack of control over many spaces in shared accommodation, which means that many households in the older genotypes with a few core labels, have to resolve the dichotomy between the location of activities and the location of related objects, and the source of required infrastructure (in this case, water and waste disposal). Consequently, there is increased to-and-fro movement between the 'sites' of specific activities spaces.

Overall, transformations in depth, integration patterns, and other configurational and geometric features above, have affected space use for activities and objects spatially in terms of specialisation, and extensibility, and consequently movement. These are partly dictated by the configuration, and degree of control over the space labels, which is a by-product of both economic capital and also the cultural capital. In the next section, we look at how social rules affect the identity of the space labels.

d) Task orientation and agent participation: - The outward looking focus of the domestic space was identified in chapter seven as reasonably consistent across the sample, an assertion also supported by the strong feature of external spatial aspects in respondent description of their dwellings in chapter five, and the heavy usage of outdoor yards, although the middle class households with larger functional complexes utilised outdoor spaces less. While the genotypes are outward focussed, they operate in different ways with regards to the task orientation and also the degree of agent participation, varying along socio-cultural lines. The fact that many space labels have more household chores is perhaps a universal thing, that a significant amount of production work underpins the domestic domain. The lack of an identifiable leisure-focussed 'core' of space labels

improved slightly in the genotypes more popular in the middle class areas. It can be argued that the increase in the core space labels, the social difference in attitudes about work and leisure, and the fact that for many, their primary reproductive work takes place away from the home, provides a psychological separation between work and leisure, although many were also involved in either farming or retailing as a secondary source of income and there was a gendered effect to the effect of task orientation.

The endurance of retail and farming activities involving the domestic space is a mark of continuity in the sample. It is noted that the scale of involvement varies from very small space stalls, to shops, and in a few cases to wholesaling and other types of commercial activity, and most likely its impact on the household's economy also varies. It is fair to say from anecdoctal evidence as well as from the results of this study, that commerce as a means of financial independence continues to be a mainstay of Yoruba society, moreso, with the current difficult economic situation, and commercial activity is an increasingly popular choice amongst middle class professionals that traditionally did not consider it of good taste.

The effect of gender and generational difference in defining boundaries between patterns, whilst not too obvious between older and newer genotypes, was more significant between shared and self-contained ones. Improved education and income levels affected the way the genotypes are used in that those more commonly used by the more financially secure educated households, which were larger functionally, reflected slightly stronger demarcations spatially between work and leisure, and in a sense between private and public spaces.

e) Privacy and space use: - Privacy was less defined by individual privacy, which can be imprinted spatially, but by the separation of activities which are private either by restricting them to a specific space such as the case of bathing and toileting, or by temporal separation, as in the case where sleeping and dressing up take place in a non-specialised space. The second option was most evident in the traditional, and in other forms of shared accommodation because the juxtaposition of activities with diverse requirements such as cases where private needs are in the same space as an interactive leisure activity. The convention of space use shows that whilst many similarities existed in the types and range of spaces where certain activities and objects were found, the DL-corridor (seg. function spaces), and the Living-room genotypes were consistently more normative than other genotypes.

f) Classification and framing of space: - There is weak classification in many space labels but with fairly strong framing, but the most strongly classified spaces are also most dominated by strongly framed objects. There is no example of weakly classified and very weakly framed space label. The Yoruba domestic space does not seem to be strictly classified or even framed although there is an increase in classification and framing strengths in the newer genotypes, which perhaps is an indication of trends to come of further divergence between the traditional and contemporary space use.

We have three main options in terms of categoric differentiation and relative positioning. Differentiation is stronger in larger functional complexes but overall still not exceptionally strong as was initially anticipated, when the inside/outside relationship is considered. Overall, there were far more points of continuities between the old and the new than was expected but the points of departure despite the practical shortcomings in the infrastructure, often marked differences in lifestyle and disposition.

9.1.5 Social rules embedded in activity and object (spatial) patterns

As stated previously in chapter six, the two main geometric rules in operation that distinguish the traditional orowa geometric type are as follows: - the separation of the service core from the rest of the domestic space, which is arguably a consequence of infrastructural inadequacies of historic time. This separation is for practical reasons, to keep effluence and odours from the toilet, and shower area, away from the living and sleeping areas. Given the context, it seems the best solution and this is probably why few complained about it. The second rule is the emphasis of function space to function space movement patterns, reflected in the low proportion of purely transition spaces (and a low T:F ratio), which hinders inhabitant-visitor separation. Perhaps this is of little interest or consequence since the geometry is usually occupied by related households and visitors to one household may be known to the other households in the dwelling. In essence, these two rules are sufficient for the requirements of the traditional agrarian society, whereby the concept of visitor rarely meant stranger.

That this dwelling type is under threat in contemporary Ile-Ife is without a doubt, because as mentioned in chapter three, many of these are being pulled down to make way for detached houses that belong to the extended families or to just one nuclear family if they have the clout and the financial willpower to do so. But the tenements (exemplified in the double-loaded geometry) are abounding to house those who need modest accommodation, reflected in the presence of this type in Enuwa.

This basic set of spatial rules only expands slightly in the double-loaded corridor, although the geometry changes from being function-based in terms of circulation to the use of a main transition space(s) to connect other function spaces. But the most significantly

geometric development is in the newer geometries- the elongated geometric type, and to some extent the two compact types, which includes rules about the separation of all the sectors (living, service, sleeping), achieved by the use of several transition space labels (lobbies, halls, short corridors), as mediators, and the elaboration of the threshold.

The geometric rules connect up with the genotype rules: - the basic rule sets in the oldest Orowa genotype which is exclusively the Orowa geometric type, is strong integration in the function orowa, and strong segregation in the service areas, and the bedrooms. The second genotype rule of the old genotype is shallow depth of interior spaces from the exterior (the shallowest genotype), which again helps when several activities are done outdoors, and ties in with the lower emphasis on privacy of the individual, and the underdeveloped concept of 'non-inhabitant as stranger'. The integration structure deepens in the newer genotypes, as well as the more enduring genotypes, which go hand in hand with increased emphasis on separation and privacy. This is achieved by elongating the plan and shifting integration focus from the orowa, to the corridor/living room. This is consistent with Heitor's (2003) findings that mediators can minimise or maximise depth.

9.1.5.1 Space use Rules

The number of core space labels increase from the older to the newer genotypes, from shared to self contained types, and from the older family compounds and tenements to the flats, semi-detached, and detached houses revealing that this is driven by socio-economic factors. As explained earlier some of the new space labels have been generated by the requirements of the educated middle class- e.g dining room, study, and garage in the newer and enduring genotypes; but also by the means been available to higher

income educated households. This is unlike Van Eijck and Bargeman (2004), finding that economics is being weakened as a determinant of lifestyle formation, for money or its lack remains a strong predictor of housing that can be accessed, though this go hand in hand generally with increased educational levels in this sample. The effect of socialization seems to work mostly via education rather than acculturation, though there is undoubtedly a trickle-down effect.

The most obvious space to have disappeared between the traditional and the modern stock is the orowa whose activities and objects have been largely transposed to several other spaces- kitchen, the living room and bedroom. The pattern of expansion of the geometric rules as stated above and the enlargement of the core labels across the traditional to the contemporary examples, conforms with Lefervbre's (1974) idea about the relationship between changes in aspects of society such as the mode of production which has certainly occurred in the sample area, and the production of 'new' (physical) spaces. These tend to coincide with the new lifestyles, which are demarcated by a change in definition about privacy, and emphasis on the nucleated household.

9.1.5.2 Spatial and social Rules: Habitus and Lifestyle;

The discussions in the previous sections suggest that the syntactic developments, changes in the spatial characteristics and the strong effect of a disposition, or a habitus is not firmly rooted in just one social variable, but underpinned by the increase in the acquired cultural capital mainly by trading-in the economic capital to increase educational capital. This has been a key point of difference, and related strongly to geometric types as well as

to syntactic variations. Space use has been more influenced by gender and generational differences, and by the need for group membership (identity), evident in the socially integrative qualities of several of the important activities mentioned.

Oldmeadow et. al (2003) argues that the desire for group membership is a powerful determinant of similarity within the group particularly in the lower social classes, where it has been found in many studies that conformity is a main factor in decisions about purchases, and was certainly the case in this study. But the desire for status or social influence which helps create a distingiushing factor between one group and another, according to Oldmeadow et. al (2003), was not as evident in the descriptions of special objects/activities in this sample. The effect of a depressed economy seems to have suppressed this particular value, which was quite important more than 25 years ago, before the economic situation in Nigeria worsened significantly. While the boundaries between social groups are created by the 'structure' outlined by Bourdieu with regards to changes in the volume and composition of social capital, social, spatial and infrastructural constraints played a part in the resultant space use patterns. Perhaps these differences have emerged from a complex correlation between these factors.

The description and shape geometry had a strong correlation with genotype, showing that the genotype also embeds the required geometry, and spatial qualities, and the most effective functioning occurs when these work together, rather than creating conflicts in how households wish to use their space. For instance, there seems to be quite some uneasiness between the geometry of tenements and any attempt to separate circulation or sectors, would be unfruitful. Of the three shape geometries, it is the combination geometry that seems to suffer a bit as it struggles to enhance, sector and circulation separation.

The strength of the syntactic and spatial differences revolved around certain space labels- living room, kitchen, and the loss of the orowa space in all contemporary dwelling types, and the introduction of new space labels. The orowa is perhaps the one space, which shows the evolutionary movement of certain domestic activities clearly, as explained in chapter seven. Underlying the syntactic differences was the fact that there are two broad genotypes- those with less segregated kitchen, (not many) and those with quite segregated kitchens, and this generally coincided with the distinction between transition-integrated genotypes and function-integrated genotypes respectively.

The functional use of spaces only varied in about a third of the space labels inventoried- mainly the living room, bedroom, kitchen. The fairly consistent non-specialisation of many of the core space labels across genotypes, the consistent manner in which many domestic activities are conducted across the board, and the similarities in extensibility patterns, combined with distinct classification and framing strengths of the core labels across the genotypes, suggests that these are aspects that cannot be jettisoned, and remain valuable in Yoruba domestic space configuration and space use.

9.1.6 Lifestyle, and meanings invested in domestic activities and objects

As stated previously, meanings attributed to objects and activities in the study showed a strong tendency towards functionality over symbolism, an emphasis that is noticeable when compared to other studies such as Csikzentmihalyi and Rochberg-Halton (1981); and Richins (1994b). However, Dittmar (1992), and Kleine and Baker, (2004) conclusions about the effect of individual ownership on the increasing strength of attachment to an

object, is quite valuable in explaining the utilitarian streak of many of the descriptions of activities and objects in this study. It is acknowledged that the questions about importance (of activities) may elicit more communal responses, but the investmement of minimal symbolism in domestic objects is partly likely due to the fact that individual ownership of domestic goods even in middle class homes in Nigeria, is not as varied. Quite often, what is strictly individual is limited to personal effects (clothes, underwear, shoes etc), and jointly owned objects are less likely to portray personal meanings.

What was distinct was that some activities (e.g. hosting social events, religious activities, guest entertainment/ relaxation, eating) rather than objects, were defined in more symbolic, self-related terms by many respondents who focussed on the ability of these activities to engender solidarities beyond the household. This is one of the main points of continuity in the social space of Yoruba domestic space, which only showed a modest lessening of focus in the educated nuclear households.

The role of materialism in relation to symbolism and attachment to domestic objects has been documented by various researchers e.g. Belk (1988) but the similarity in the level of symbolism mentioned by respondents in poorer, and also in more financially comfortable households would suggest that this is more about a cultural viewpoint amongst the Yoruba's more than anything else. The lack of individual ownership of many object categories goes some way in explaining why more private meanings were expressed by more educated and richer respondents but the overriding pattern was close alignment of meaning classes to the public meanings. Only a few of the objects seemed to facilitate the exploration of more private meanings over the orientation towards social integration with the external community. Dittmar (1992) explores links between changes in modes of

production or social conditions and the appearance of new spaces or meanings [similar to Lefervbre (1974)]. She states that the change in western countries from pre-industrial to industrial also marked the move from ascribed identity to achieved identity, that is bearing signification that have been invested upon the objects by the individual subject, as opposed to its intrinsic properties.

Elements of both seem to be embedded in the results of this research, but the explosion of achieved identity with the explosion of the bourgeois middle class does not seem to be fully developed in the Yoruba elite middle class represented in my sample. Perhaps it is an aspect that has been hampered by Nigeria's economic situation or perhaps, the sample is not large enough to document these processes. In any event, Dittmar (1992) identifies that this is usually a gradual transformation and likely to be an ongoing process. In addition, the focus on self-related meanings for important activities in this research, as discussed previously, was more based on attributes of the extended self, perhaps because identity within the group is very important within the culture and obligations to the group often overrides individual needs, as opposed to questionnaire limitations. A summary of how the special objects were portrayed is given overleaf in Table 9-1, p344.

Table 9-1: Special objects description

Objects closer to Public meanings	**Objects closer to Private meanings**	**Objects with a combination of Private and Public Meanings**
Food (utility and convenience)	**Fridge** (utility, and enjoyment)	**Electronic gadgets** (enjoyment and information and expensive, convenience, status, utility)
Cars/bikes (convenience and religious)	**Iron & electrical appliance** (utility, and convenience and sentiment / aesthetics)	**Clothing** (utility, and sentiment/ aesthetics)
Cooking utensils (utility and convenience)		**Portable water** (utility, and income generating, and storage)
Retails goods (income generating)		**Regular use** furniture (utility, and enjoyment and expensive/ irreplaceable)
Cooker ((utility and convenience)		**Pictures & artwork** (sentiment/ aesthetics and income generating)
Books (utility and information)		**Phone and guitar** (enjoyment)
Jewellery ((expensive & irreplaceable)		**Fan & clock** (ventilation and utility, expensive, sentiment)
Crockery (utility, expensive & irreplaceable)		
Worship objects (religious purpose and the need for proper storage for it)		

Of the five qualities that can be embedded in object meanings identified by Csikzentmihalyi and Rochberg-Halton (1981), which are A) mediation of conflicts within self, B) qualities of self, C) expression of aspirations, D) signs of status, and E) symbols of social integration, the most prominently explored by the respondents in this thesis were point E, and to a lesser extent, point B, and D.

The list of important activities showed a predominance of household and group activities, over individual ones and the reasons attributed to some of the household and group activities is divided between emphasis on the functional role and the integrative qualities of these activities. Some objects and activities were more closely aligned to the older adults than to the younger respondents, although the correlation between the types of special objects and activities with generation differences was not significant.

Distinctions based on gender were not striking in this sample similar to Richins' (1994b) findings but women focussed more on utility and men focused slightly more on information, sentiment and enjoyment. More women mentioned objects related to cooking and other domestic chores, or those that made certain chores easier, and both male and female responses focussed more on non-self related meanings for their special objects suggesting that the focus on integrative quailites is a cultural feature. Education and income showed similar correlations with differences in space use and meanings.

There is a strong vein of continuity in the sample across socio-economic and spatial variables, reflected in elements of spatial identity, but moreso in the general pervasiveness of household and extended activities, and in the weak social rules controlling visitor access to most spaces, though there is increased individual privacy and spatial mapping of privacy in self-contained dwellings. Continuity is also reflected in the consistency of meanings attached to domestic objects and activities that transcended many socio-economic variables.

All these relate to Holt (1998) assertion that while relational difference is important, meanings are significantly constituted by the ways in which people act in particular social contexts and do not exist separate from history. Meanings of a particular object or action are constructed through its contextuality and association with other cultural objects and practices that are part of a historically accumulated repertoire, and as such likely to endure. The result of this study supports Holt's (1998) statement that meanings of objects and activity are never constructed by a single abstracted semiotic system but exist as multiple overlapping resources from which actors combine and juxtapose. Nonetheless, as this, and other studies would suggest, there are overall patterns of perceiving of events and things.

9.2 In Conclusion

A house is not a home, when there's no one living there..[83]

In terms of the main research question about the degree of consonance between lifestyles and spatial patterns in Yoruba domestic architecture, the results of the study showed several aspects of continuity, which seem relevant beyond the culture context of the thesis. This is based on the fact that several similarities were identified between certain spatial and syntactic features of this study and the work of other researchers cited. Whilst differences exist in the way physical space is configured in each genotype, and in the way socialisation occurs in the domestic space, there are major points of continuity in terms of space use. This exists alongside aspects which mark the transformation from the extended-family orowa house to the self-contained detached and semi-detached flats. Nonetheless, the impact of infrastructural shortcomings cannot be ignored.

The process of sustaining routinized social practises in itself contains the elements of change. For example, similarities between the orowa house and the tenement house existed because of modifications that have occurred in the rules governing the grammar of the tenement house. These take cognisance of the fact that the tenement accommodation is used by non-related households, and the number of households in residence changes over time. The tenement has responded to its modified programme by incorporating minor circulation rings which connects suites of habitable rooms, enabling some flexibility in its use, whilst retaining its essential elements of a central corridor, non-differentiated habitable rooms, and the separation of the service areas from the main corridor of the rooms, which is not dissimilar to the traditional orowa houses.

[83] Lyric from 'A house is not a home' by ???

Continuity in the way many domestic practises are conducted masks the fact that the social space of activities, objects, and meaning, and the physical space must accommodate modest adjustments in use to ensure its survival. It is no coincidence that the more enduring genotype in the sample is also one with some degree of geometric flexibility and which also had a number of variants to its genotype. Continuity seems to be a 'process' of reproducing rather than a fixed thing in itself. Whilst specific changes in aspects of production have coincided with the transformation of the housing stock, in spatial configuration and space use, overall, the changes have been encompassed into some existing spatial and social rules even though some of these have had to be modified to accommodate some of the new rules (see p194).

The congruence between lifestyle and spatial types is relatively strong, manifested in the control of the dwelling type (shared or self-contained) in the genotypes and the geometries, particularly in terms of sector development. The transition between spatial and syntactic types was found to also have a degree of congruence with lifestyles although this seem to result from a combination of underlying dispositions that mark personal values as well as contextual limitations in the region. It was interesting to note that micro-differences between subcategories of socio economic or market levels could be identified. A few spatial markers distinguished the two middle class housing areas, reflecting differences in the profit margin between the Estates and Campus housing.

The degree of congruence between lifestyle choices and space use is more pronounced. About half of the object categories showed little variation in location(s), integration and depth or even in its relative ranking when compared with all the objects inventoried. This relates to Manum's (2005) publication about generality over specificity, which reiterates

the need for generic-ness in space supporting the evidence of non-specialisation of many of the space labels in the sample, which was also consistent across genotypes. It seems that just a few spatial rules: - The use of temporal separation, and the effect of contiguity in time and place, combined with Certeau's (1984) concept of 'making do' served to synchronise aspirations with the limitations of domestic structures. This fits in quite well with the Yoruba cosmology, whereby the need of the individual can necessitate modifications to cultural norms, if of urgent importance, evidenced in many ancient Yoruba sayings one of which is translated as *'If the gods cannot be of assistance to the individual, then it should at least conserve the individual's status quo'*[84].

The overall utilitarian focus of most special objects and activities, and the greater investment of symbolism in activities that connect the household to the outside world, is also consistent with the wider framework of Yoruba values that esteem humanity (family, children, age groups, secret societies) above the inanimate. It is one of the areas that can be investigated more in depth in subsequent research, by asking respondents to describe domestic objects strictly from an individual viewpoint.

Finally, in conclusion about the effect of time on the development of Yoruba domestic space- we have the persistence of certain practises, existing with key spatial changes that have occured. New ideals about issues like privacy are embedded into older themes such as social integration. Although the orowa house is fast disappearing, many of its values of social communium remain, though displaced into other space labels. It would be interesting to conduct a similar study that seeks to tie physical space to social space via a comprehensive inventory of the contents of the domestic space, within another subgroup in Nigeria that are quite culturally different from the Yorubas.

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[84] This is a common Yoruba saying "Orisha bi o ko le gbe mi, se mi bi o se bami."

The contributions of this thesis are as follows. Firstly, in methodological terms, by employing a novel application of Monteiro's (1997) classifications and syntactic analysis of domestic activities, to objects, resulting in the identification of an incomplete banding process. The application of extensibility analysis to activity and object locations, revealed information about intensity of focus and movement that can be applied in other samples. The use of respondent-generated inventories, coupled with forms of representing space use (e.g the Use and Content graphs), were useful in transforming qualitative to measurable results.

Contributions to spatial findings included identifying a link between the expansion of the functional core labels, and social developments, demonstrated in the trajectory of a space label from being a peripheral to a core space, across, genotypes, as they become fundamental to a lifestyle. Continuity in morphology is underpinned by a degree of generic-ness to accommodate lifestyle differences. New spatial types are connected to old types via spatial practices, and perception is rarely independent of its value base. The results confirmed the role of education, income, tenure, and control on spatial patterns.

Contributions to understanding the social realm of the domestic space include the identification of social (and spatial) rules, and demonstrating the transformation of rules from the orowa, to the tenement, and the self-contained units, and providing evidence of the continued existence of production work in the domestic domain, across socio-economic differences. More symbolic values were identified with some activities in this study, in contrast to the focus of symbolic 'energy' on domestic objects identified in other studies referenced here, which suggests a trajectory between less industrialised societies, and activities as solidarity enhancers, towards more industrialised, less connections with larger familial networks, and the transference of symbolism into material things.

Finally the findings about spatial and social developments, continuity and change, about what are considered negotiable, and constitute core cultural elements, have implications for policy development for housing in Nigeria. There is an need to continue to build up a body of knowledge about enduring core cultural elements in domestic practises, to utilise combined sociological, and spatial methodologies, and to gather empirical information, which can be 'measured' and hopefully influence the design process.

9.2.1 Limitations of this research

There were a couple of procedural limitations. The respondent-generated inventory was one of the features of the research methodology, but it is unlikely to be totally exhaustive if collated from a single stage study. Nonetheless, it provided more detailed information than a researcher-imposed inventory. The lack of existing floor plans - was a blessing in disguise, because it gave the team the opportunity to prepare the object-map as well. The choice of synchronous data to construct a diachronic analysis, was overcome to a large extent by using socio-economically distinct areas developed at difference times.

9.2.2 Future research questions

Consequently, the question of doing a similar cross-cultural comparison study spring to mind, as this would allow some of the distinct points noted here to be tested to further ascertain how critically does it map habitus, or the value base of the individual person. One area that was noted is that whilst the full sets of techniques devised for analysing the sector paradigm was not utilised in this study, it was quite clear that similar principles were in operation in this sample, although social aspects such as privacy differed to the Brazil sample. It would be of interest to apply sector paradigm analyses to a cross-cultural study to see how this operates in greater detail.

Bibliography

1. Abercrombie, N., S. Hill, et al. (1984, 1988, 1994, 2000). The Penguin Dictionary of Sociology. London, Penguin Books.
2. Adams, P. C. (1995). "A reconsideration of Personal Boundaries in Space-Time." Annals of the Association of American Geographers **85**(2): 267-285.
3. Adeyombo, A. (1982). Planning Administration: unpublished report address to Environmental Planning Students Association, Obafemi Awolowo University, Ile-Ife. Nigeria. Ile-Ife, Oranmiyan Local Authority, Planning Department.
4. Allison, P. M. (1999). Introduction. The Archaeology of Household activities. P. M. Allison: 1-17, London; New York: Routledge
5. Altman I, and C. M Werner (1985). Home Environments. Altman I, and C. M. Werner, New York: Plenum Press.
6. Amorim, L. (1999). 'The Sectors' Paradigm: a study of the spatial and functional nature of modernist housing in Northeast Brazil'. (Unpublished thesis. Bartlett Graduate school of Architecture. London, University College London).
7. Amorim, L. (2001a). Houses of Recife: from diachrony to synchrony. 3rd International Space Syntax Symposium, Atlanta.
8. Amorim, L. (2001b). When Graphs are Predictable: The role of sectors in guiding depth distribution in buildings. 3rd Space Syntax Symposium, Atlanta.
9. Ant, W. (1902). "Practical Notes on the Yoruba Country and Its Development." Journal of the Royal African Society **1**(3): 316-324.
10. Asami, Y., Tamiki Ohtaki (2000). "Prediction of the shape of detached houses on residential lots." Environment and Planning B: Planning and Design **27**: 283-295.
11. Baaudrillard, J. (1975, 1981). For a Critique of the Political economy of the sign. Translated by Charles Levin. St Louis, Mo. Telos
12. Bachelard, G. (1964). The Poetics of Space (The classic look at how we experience intimate places). Boston, Beacon Press.
13. Bafna, S. (2001). Geometrical Intuition of Genotypes. Space Syntax Third International Symposium, Atlanta, Georgia. USA.
14. Bafna, S. (2003). "Space Syntax: a brief introduction to its logic and analytical techniques". Environment and Behaviour **35**(1): 17-29.
15. Barredo, J., L. Demicheli, C. Lavalle, M. Kasanko, N. McCormick. (2004). "Modelling future urban scenarios in developing countries: an application case study in Lagos, Nigeria." Environment and Planning B: Planning and Design **32**: 65-84.

16. Bascom, W. (1942). "The principle of Seniority in the Social Structure of the Yoruba." American Anthropologist, New Series **44**(1): 37-46.
17. Bascom, W. (1951). "Social Status, Wealth and Individual Differences among the Yoruba." American Anthropologist, New Series **53**(4): 490-505.
18. Bascom, W. (1962). "Some aspects of Yoruba Urbanism." American Anthropologist, New Series **64**(4): 699-709.
19. Bascom, W. (1969). The Yoruba of Southwestern Nigeria, Prospect Heights, Ill: Waveland Press.
20. Bascom, W. R. and M. J. Herskovits (1959). Continuity and Change in African Cultures. Chicago, University of Chicago Press.
21. Beckett, P. and J. O'Connell (1977). Education and Power in Nigeria. London, Hodder and Stroughton.
22. Beetham, M. (1998). "The reinvention of the English Domestic Woman: Class and 'Race' in the 1890s' Woman's magazine." Women's Studies International Forum **21**(2): 223-233.
23. Belasco, B. I. (1980). The Entrepreneur as Culture Hero: preadaptations in Nigerian economic development. New York: Praeger.
24. Belk, R. W. (1988). "Possessions and the Extended Self." Journal of Consumer Research **15**: 139-168.
25. Bernard, H. R. (2002). Research Methods in Anthropology: Qualitative and Quantitative Approaches, AltaMira Press.
26. Bernstein, B. (1971). Class, Codes and Control. Vol 1: theoretical studies towards a sociology of language. London, Routledge and Kegan Paul.
27. Bernstein, B. (1973). Class, Codes and Control, Vol 2: applied studies towards a sociology of language. London, Paladin St. Albans and Routledge and Kegan Paul.
28. Bernstein, B. (1975). Class, Codes and Control, Vol 3: Towards a theory of educational transmissions. London, Routledge andKegan Paul.
29. Bernstein, B. (1990). Class, Codes and Control, Vol 4: the Structuring of Pedagogic Discourse. London, Routledge.
30. Bernstein, B. (1994). "Edwards and His Language Codes: Response to A.D. Edwards, Language Codes and Classroom Practice." Oxford Review of Education **20**(2): 173-182.
31. Bianchi, S. M., Melissa A. Milkie, Liana C. Sayer, John P. Robinson (2000). "Is Anyone Doing the Housework? Trends in the Gender Division of Household Labor." Social Forces **79**(1): 191-228.
32. Bittman, M. and J. Wajcman (2000). "The Rush Hour: The Character of Leisure Time and Gender Equity." Social Forces **79**(1): 165-189.

33. Booth, S. S. (1999). Reconstructing Sexual Geography: Gender and Space in changing Sicilian settlements. House Life: Space, Place and Family in Europe. D. Birdwell-Pheasant and D. Lawrence-Zuniga. Oxford, Berg.
34. Booth, S. S. (1999). Gender and Space in changing Sicilian settlements. House Life: Space, Place and Family in Europe. D. Birdwell-Pheasant and D. Lawrence-Zuniga. Oxford, Berg.
35. Bourdieu, P. (1973). The Berber House. Rules and Meanings: the Anthropology of everyday knowledge. M. Douglas: 98-110.
36. Bourdieu, P. (1979, 1984). Distinction: A social critique of the judgement of taste. Paris, London, Routledge and Kegan Paul Ltd.
37. Brown, F. E. (1986). "Continuity and Change in the Urban House: Developments in Domestic Space Organization in Seventeenth-Century London." Society for Comparative Study of Society and History: 558-590.
38. Brown, F. E. and P. Steadman (1987). "The analysis and interpretation of small house plans: some contemporary examples." Environment and Planning B: Planning and Design **14**: 407-438.
39. Brunso, K., J. Scholderer, K. G. Grunert. (2004). "Closing the gap between values and behavior- a means-end theory of lifestyle." Journal of Business Research **57**: 665-670.
40. Bulmer, M., Ed. (1984, 1986). Sociological Research Methods: an introduction. Basingstoke, MacMillan.
41. Bulmer, R., Ed. (1992). Unnatural Kinds. Objects and Objections.
42. Bustard, W. (1999). "Space, Evolution, and Function in the houses of Chaco Canyon." Environment and Planning B: Planning and Design **26**: 219-240.
43. Calhoun, C. (1996). "A Different Poststructuralism." Contemporary Sociology **25**(3): 302-305.
44. Castle, G. (2001). Editor's Introduction: Resistance and Complicity in Postcolonial studies. Postcolonial Discourses: An Anthology. G. Castle. Oxford and Malden, Massachusetts, Blackwell Publishers Ltd.: i-xxiii.
45. Cavalanti, A. F. and E. B. F. Trigueiro (2003). Granny's Home was not exactly like Daddy's Home. 3rd International Space Syntax Symposium, Atlanta.
46. Chapman, T. and J. Hockey (1999). The ideal home as it is imagined and lived. Ideal Homes? Social Change and Domestic Life. T. Chapman and J. Hockey. London, Routledge.
47. Choi, Y. K. (2003). "The spatial structure of power: traditional villages and houses in Korea." Environment and Planning B: Planning and Design **30**: 589-603.

48. Clarke, A. J. (2001). The aesthetics of Social Aspiration. Home Possessions: material culture behind closed doors. D. Miller, Oxford, U.K, Newyork, N.Y. Berg: 23-45.
49. Colakoglu, B. (2005). "Design by grammar: an interpretation and generation of vernacular hayat houses in contemporary context." Environment and Planning B: Planning and Design **32**: 141-149.
50. Marcus, C. C. (1975). Easter Hill Village: some social implications of design. London, Collier Macmillan.
51. Csikzentmihalyi, M. and E. Rochberg-Halton (1981). The meaning of things: Domestic symbols and the self. Cambridge, Cambridge University Press.
52. Cunningham, M. (2001). "Parental Influences on the Gendered Division of Housework." American Sociological Review **66**(2): 184-203.
53. Curran, L. and L. S. Abrams (2000). "Making Men into Dads: Fatherhood, the State and Welfare Reform." Gender and Society **14**(5): 662-678.
54. Davidoff, L. and C. Hall (1987). Family Fortunes: men and women of the English middle class 1780-1850. London, Hutchinson.
55. De Certeau, M. (1984). The Practice of Everyday Life. Berkeley and Los Angeles, University of Califonia Press, London, University of Califonia Press Ltd.
56. De Vaus, D. (2002). Analyzing Social Science Data, 50 Key Problems in Data Analysis. London, Thousand Oaks, New Delhi, Sage Publications Ltd.
57. Department, S. D. (1968). Metric Space Standards. The new Scottish Housing Handbook Bulletin 1, Scottish Development Department, HMSO.
58. Dittmar, H. (1992). The Social Psychology of Material Possessions. New York, St. Martins's Press.
59. Dodgshon, R. A. (1998). Society in Time and Space: a geographical perspective on change. Cambridge, Cambridge University Press.
60. Dolgin, J. L, D. Skemnitzer, D. M. Schneider (1977). Symbolic Anthropology: a reader in the study of symbols and meanings. New York, Columbia University Press.
61. Donald, M. (1999). Domestic Space. Reading the 19th Century Interior, Bryden, I. and J. Floyd. Manchester; London, Manchester University Press.
62. Douglas, M. (1991). "The idea of a Home: a kind of space." Social Research **58**(1): 287-307.
63. Douglas, M. and B. Isherwood (1979). The world of goods: towards an anthropology of consumption. London, Allen Lane.
64. Dovey, K. (1985). Home and Homelessness. Home Environments. I. Altman and C. M. Werner. New York, Plenum Press.

65. Drazin, A. (2001). A man will get furnished: Wood and Domesticity in Urban Romania. Home Possessions. D. Miller. Oxford, U.K. New York, N.Y. Berg: 173-199.
66. Drewal, H. J, J. Pemberton, R. Abiodun. (1989). Yoruba Nine Centuries of African thought. New York: Centre for African Art in association with Henry N. Adams Inc.
67. DuPuis, E. M. and D. Goodman (2005). "Should we go 'home' to eat?: toward a reflexive politics of localism." Journal of Rural Studies **21**: 359-371.
68. Durkheim, E. (1938). The Rules of Sociological Method. New York, The Free Press.
69. Durkheim, E. (1984). The Division of Labor in Society. New York, The Free Press.
70. Dursun, P and G. Saglamer (2003). Spatial analysis of different home environments in the city of Trabzon, Turkey. Space Syntax 4th International Symposium. Volume 1 proceedings. London, University College London.
71. Engels, F. (1972). The origin of the family, private property, and the state. Introduction by Evelyn Reed. New York, London. Pathfinder Press.
72. Epstein, A. L. (1967). "Urbanization and Social Change in Africa." Current Anthropology **8**(4): 275-295.
73. Evans-Pritchard, E. E. (1973). Time is not a Continuum. Rules and Meanings: the Anthropology of everyday knowledge. M. Douglas: 75-81.
74. Falola, T. and A. Adebayo (2000). Culture, Politics and Money amoung the Yoruba, New Brunswick, N.J: London. Transaction Publishers.
75. Flint, J. E. (1966). Nigeria and Ghana. Englewood Cliffs, N.J. Prentice-Hall.
76. Forde, D. C. (1946). Native economies of Nigeria. London, pulished under the auspices of Nuffield College by Faber and Faber.
77. Forde, D. C. (1963). Habitat, Economy and Society: a geographical introduction to ethnology. London. Methuen.
78. Forty, A. (2000). Space. Words and Buildings: A vocabulary of Modern Architecture. New York, Thames and Hudson: 256-275.
79. Gabriau, M. (1970). Structural Anthropology and History. Structuralism: A Reader. M. Lane: 156-169.
80. Gardi, R. (1974). Indigenous African Architecture. Translated by Sigrid McRae. New York. Van Nostrand Reinhold.
81. Gartman, D (2002). "Bourdieu's Theory of Cultural Change: explication, application, critique" Sociological Theory. **20** (2). 255-277.
82. Garvey, P. (2001):" Organised Disorder: moving furniture in Norwegian Homes" Home Possessions D. Miller. Oxford, U.K. New York, N.Y. Berg:47-68
83. Gatzlaff, D. H, R. K. Green, D. C. Ling (1998). "Cross-Tenure Differences in Home

Maintenance and Appreciation". Land Economics. **74** (31). 328-342.

84. Gazso-Windle, A. and J. A. McMillan (2003). "Doing Domestic Labour: strategising in a gendered domain" Canadian Journal of Sociology. **28** (3): 341-366.
85. Ghafur, S. (2002). "Gender Implications of space use in home-based work: evidences from slums in Bangladesh." Habitat International **26**: 33-50.
86. Giddens, A. (1984). The Constitution of Societ: Outline of the Theory of Structuration. Cambridge, Polity Press
87. Giddens, A. (1993). New Rules of Sociological Method: A Positive Critique of Interpretative Sociologies. Cambridge, Polity Press.
88. Gips, J and G. Stiny (1975). "An investigation of Algorithmic Aesthetics". Leonardo. **8.** 213-220.
89. Glassie, H. (1975). Folk Housing in middle Virginia. Knoxville, T.N., University of Tennessee Press.
90. Goffman, E. (1959). The Presentation of Self in Everyday life. London, Penguin Books Ltd.
91. Gosling, S. D, K. H. Craik, N. R. Martin, M. R. Pryor. (2005). "The personal living space cue inventory: an analysis and evaluation." Environment and Behaviour **37**(5): 683-705.
92. Gugler, J. and W. G. Flanagan (1978). Three types of change. Urbanization and Social Change in West Africa: 97-117.
93. Hagerstrand, T. (1975). Space, Time and Human Conditions. Dynamic Allocation of Urban Space. S. et. al.
94. Hanson, J. (1998). Decoding Homes and Houses. Cambridge, Cambridge University Press.
95. Hanson, J. (2000). "Urban Transformations: a History of Design Ideas." Urban Design International **5**(2): 97-122.
96. Haralambos, M. (1985). Sociology,: Themes and Perspectives, Bell and Hyman.
97. Harris, P. B., C. M. Werner, B. B. Brown, D. Ingebritsen (1995). "Relocation and Privacy regulation: A cross-cultural analysis." Journal of Environmental Psychology **16**: 311-320.
98. Hashim, A. H., Z. A. Rahim, S. N. Syed Abdul Rashid, N. Yahaya. (2006). "Visual privacy and family intimacy: a case study of Malay inhabitants living in two-storey low-cost terrace housing." Environment and Planning B: Planning and Design **33**: 301-318.
99. Hecht, A. (2001). Home Sweet Home: Tangible Memories of an Uprooted Childhood. D. Miller. Home Possessions, Oxford, U.K. New York, N.Y. Berg: 123-145.
100. Heitor, T., J. P. Duarte, and M. Pinto. (2003). Combining grammars and Space syntax: Formulating, evaluating and generating designs. Fourth International Space Syntax

Symposium, London.

101. Hersch, J. and L. S. Stratton (2002). "Housework and Wages." The journal of Human Resources **37**(1): 217-229.

102. Hillier, B. (1996a). Space is the machine: A configurational theory of architecture. Cambridge, Cambridge University Press.

103. Hillier, B. (1996b). "Cities as movement economies." Urban Design International **1**(1): 41-60.

104. Hillier, B. (1999a). "The Hidden geometry of deformed grids: It works, when it looks as though it shouldn't." Environment and Planning B: Planning and Design **26**(2): 169-191.

105. Hillier, B. (1999b). Space as Paradigm. Space Syntax Second international Symposium, Brasilia.

106. Hillier, B., and Alan Penn (2004). "Rejoinder to Carlo Ratti." Environment and Planning B: Planning and Design **31**: 501-511.

107. Hillier, B. and Graham (1987). "Ideas are in Things: an application of the Space Syntax method to discovering house genotypes." Environment and Planning B: Planning and Design **14**: 363-385.

108. Hillier, B., M. Greene, J. Desyllas. (2000). "Self-generated Neighbourhoods: the role of urban form in the consolidation of informal settlements." Urban Design International **5**: 61-96.

109. Hillier, B. and J. Hanson (1982). "Domestic Space organization: two contemporary space codes compared." Architecture and Behavior: 21-.

110. Hillier, B. and J. Hanson (1984). The Social Logic of Space. Cambridge, Cambridge University Press.

111. Hillier, B. and A. Leaman (1974). "How is design possible?" Journal of Architectural Research **3**(1).

112. Hodder, I. (1987). Introduction. The Archaeology of Contextual Meanings. I. Hodder. Cambridge, Cambridge University Press.

113. Hodder, I., Ed. (1989). Post-modernism, post-structuralism and post-processual archaeology. The meaning of things: Material Culture and Symbolic Expression. London, Unwin hyman, HaperCollins Academic.

114. Hodgkin, T. (1960). Nigerian Perspectives: An Historical Anthology. London, Oxford University Press.

115. Holt, D. B. (1998). "Does cultural capital structure American consumption?" Journal of Consumer Research **25**(1): 1-25.

116. Holt, D. B. (1997). "Poststructuralist Lifestyle Analysis: conceptualising the social

patterning of comsumption in postmodernism" Journal of Consumer Research **23**(3): 1-25.

117. Imoagene, O. (1977). "Extended family detachment among the new elite in emergent society: a strategy of social closure in class formation." The West African Journal of Sociology and Political Science, an international quarterly **2**(1&2).

118. Imoagene, O. (1992). The Nigerian Class structure: 25-39. Evan Bros.

119. Jaiyebo, O. (2003). "Women and Household sustenance: changing livelihoods and survival strategies in the peri-urban areas of Ibadan." Environment & Urbanization **15**(1): 111-120.

120. Johnson, R. S. (1921, 1966). The History of the Yorubas: from the earliest times to the begining of the British Protectorate. C.M.S Bookshops.Printed by Lowe and Drydone Printers Ltd, London.

121. Judd, C. M., E. R. Smith, L. H. Kidder (1991). Research methods in Social Relations. Forth Worth, Harcout, Brace, Jovanovich.

122. Kalay, Y. and E. Shaviv (1979). "A method for Evaluating Activities Layout in Dwelling Units." Planning and Environment **14**: 227-234.

123. Karlsson, N. P. Dellgran, B. Klingander, T. Garling (2004). Household Consumption: influences of aspiration level, social comparison, and money management. Journal of Economic Psychology. **25.** 753-769.

124. Katz-Gerro, T. and Y. Shavit. (1998). "The stratification of Leisure and Taste: Classes and Lifestyles in Israel." European Sociological Review **14**(4): 369-386.

125. Kent, S. (1990). Activity areas and architecture: an interdisciplinary view of the relationship between use of space and domestic built environments. Domestic Architecture and the use of space: An interdisciplinary cross-cultural study. S. Kent: 1-8.

126. King, A. (2000) "Thinking with Bourdieu against Bourdieu: a 'practical' critique of the habitus. Sociological Theory. **18** (3) 417-433

127. Kingery, W. D. (1996). Introduction. Learning from things. W. D. Kingery, Smithsonian Institution.

128. Kleine, S. S. and S. M. Baker (2004). "An Integrative Review of Material Possession Attachment." Academy of Marketing Science Review **2004**(1).

129. Korosec-Serfaty, P. (1985). Experience and Use of the Dwelling. Home Environments. I. Altman and C. M. Werner. New York, Plenum Press: 65-83.

130. Laitin, D. (1986). Hegemony and Culture: politics and religious change among the Yoruba. Chicago, London. University of Chicago Press.

131. Lamont, M. and M. Fournier (1992). Cultivating differences: symbolic boundaries and the

making of inequality. Contemporary Sociology. **22** (6). 868-870.

132. Lander, L. (1830). Extracts from the journal of an expendition undertaken by the order of his majesty's government, to determine the course and termination of the Niger, more proeerly named Quorra from Yaoori to the sea. Journal of the Royal Geographical Society of London. Vol **1.** 179-191.

133. Lastovicka, J. L. (1982). "On the Validation of lifestyle Traits: A Review and Illustration." Journal of Marketing Research **19**(1): 126-138.

134. Law, R. C. C. (1973). Sources of Yoruba History, Clarendon: 9-24.

135. Lawrence, R. J. (1982). "Domestic Space and Society: a cross-cultural study." Comparative Study of Society and History **24**(1).

136. Lefebvre, H. (1974,1984). The Production of Space, translated by D. Nicholson-Smith. Oxford U.K., Malden, U.S.A. Victoria, Australia. Blackwell Publishing.

137. Levi-Strauss, C. (1963). Structural Anthropology. translated by Claire Jacobson. U.S.A. , Basic Books Inc.

138. Llewellyn, M. (2004). "'Urban village' or 'White house': envisioned spaces, experienced places, and everyday life at Kensal House, London in the 1930s." Environment and Planning D: society and space **22**: 229-249.

139. Lloyd, P. C. (1971). The political development of Yoruba Kingdom in the 18th and 19th Centuries. Royal Anthropological Institute Occasional paper no. 31.

140. Mabogunje, A. (1966). Urbanization in Nigeria. London, University of London Press.

141. Mahmud, S. (2003). "Women and the transformation of domestic spaces for income generation in Dhaka bustees" Cities **20** (5): 321-329

142. Maines, D. (2000). "The Social Construction of Meaning." Contemporary Sociology **29**(4): 577-584.

143. Malinowski, B. (1961). The dynamic of space culture: an inquiry into race relations in Africa. Westport, Connecticut, Greenwood Press.

144. Manke, B., B. L. Seery, A. C. Crouter, S. M. McHale. (1994). "The Three Corners of Domestic Labor: Mothers', Fathers', and Children's Weekday and Weekend Housework." Journal of Marriage and the family **56**(3): 657-668.

145. Mann, M., Ed. (1983). MacMillan Student Encyclopedia of Sociology, The MacMillan Press Ltd.

146. Manum, B (2005). Generality versus Specificity: a study on the interior space of architecture. 5th International Space Syntax Symposium. Delft.

147. Marcoux, J. S. (2001). The Refurbishment of Memory. Home Possessions; Material Culture behind Closed Doors. D. Miller. Oxford, U.K. New York, N.Y. Berg: 69-86.

148.Mayall, K. and G. B. Hall (2005). "Landscape Grammar 1: Spatial grammar theory and landscape planning." Environment and Planning B: Planning and Design **32**: 895-920.

149.McDaniel, S. A. (2003). "Social Cohesion and Gender: Reflections on Tendencies and Tensions." Canadian Journal of Sociology, Special Issue on Social Cohesion in Canada **28**(1): 43-50.

150.McFarlane, S. R. Beaujot, and T. Haddad. (2000). Time constraints and relative resources as determinants of the sexual division of domestic work. Canadian Journal of Sociology. **25** (1). 61-82.

151.McNetting, R., E. J. Arnould, et al. (1984). Households: Comparative and Historical Studies of the Domestic group. Households: Comparative and Historical Studies of the Domestic group. R. McNetting, E. J. Arnould and R. Wilk.

152.Merleau-Ponty, M. (1945). Phenomenology of Perception. London, Routledge.

153.Miller, D. (2001). Behind closed doors. Home Possessions: Material Culture behind closed doors.1-19. D. Miller, Oxford, U.K; New York, N.Y. , Berg:

154.Monteiro, C. and B. Hillier (1987). The morphology of domestic experience: a comparative analysis of the spatial patterns of domestic activity in Brazilian dwellings.

155.Monteiro, C. G. (1997). Activity Analysis in Houses of Recife, Brazil. Space Syntax First International Symposium, London.

156.Moore, B. (1984). Privacy; Studies in Social and Cultural History, Pantheon Books.

157.Moore, J. (2000). "Placing Home in context." Journal of Environmental Psychology **20**: 207-217.

158.Mumford, L. (1961). The City in History: its origins, its transformation and its prospects. New York, Harcourt, Brace and Janovich Inc.

159.Munro, M. and R. Madigan (1999). Negotiating Space in the Family Home.

160.Myers, G. A. (2003). "Designing power: forms and purposes of colonial model neighbourhoods in British Africa." Habitat International **27**: 193-204.

161.Nash, R. (2003). "Social explanation and Socialization: on Bourdieu and the structure, disposition, practice scheme." Sociological Review **51**(1): 43-62.

162.National Population Commission (2000). Nigeria Demographic and Health Survey 1999, National Population Commission.

163.National Population Commission (2001). The 1999 Nigeria Demographic and Health Survey; Policy and Programme implications (Southwest zone), National Population Commission.

164.Neufert, E. (1980). The Architects Data. London, Granada.

165.Newell, P. B. (1998). "A cross-cultural comparison of privacy definitions: A systems

approach." Journal of Environmental Psychology **18**: 357-371.

166. Nippert-Eng, C. (1996). "Calendars and Keys: The Classification of 'Home' and 'Work'." Sociological Forum **11**(3): 563-582.

167. O'Connel, J. (1966). "The political class and economic growth." The Nigerian Journal of Economics and Social Studies **8**(1): 7-23.

168. Ogu, V. I. and J. E. Ogbuozobe (2001). "Housing policy in Nigeria: towards enablement of private househing development." Habitat International **25**: 473-492.

169. Ogunsina, B. (1996). "Gender Ideology: Portrayal of Women in Yoruba Ijala." African Languages and Cultures **9**(1): 83-93.

170. Ojo, G. J. A. (1966). Yoruba Culture: A Geographical Analysis. London, University of Ife and University of London Press.

171. Ojo, G. J. A. (1967). Yoruba Palaces; A study of Afins of Yorubaland. London, University of London Press.

172. Okoko, E. (2004). "Tenant's willingness to pay for better housing in targeted core area neighbourhoods in Akure, Nigeria." Habitat International **28**: 317-332.

173. Oldmeadow, J. A., M. J. Platow, M. Foddy, D. Anderson. (2003). "Self-Categorization, Status, and Social Influence." Social Psychology Quarterly **66**(2): 138-152.

174. (2002). Oxford English Dictionary. Oxford, Oxford University Press. **2002**.

175 Oyewumi, O. (2005) "Colonising bodies and minds: gender and colonialism" Postcolonialisms: an anthology of cultural theory and criticism Desai, G. and S. Nair. Oxford: Berg. 339-361.

176. Ozaki, R. and J. R. Lewis (2006). "Boundaries and meaning in social space: a study of Japanese house plans." Environment and Planning D: society and space **24**: 91-104.

177. Pader, E. J. (1993). "Spatiality and Social Change: Domestic space use in Mexico and the United States." American Ethnologist **20**(1): 114-137.

178. Peterson, R. A, and R. M. Kern (1996). "Changing Highbrow taste: from snob to omnivore" American Sociological Review **61** (5): 900-907.

179. Patterson, A. A. Unobtrusive measures: their nature and utility for architects. Philadelphia, Pennsylvania State University.

180. Pheasant, S. (1999). Bodyspace- Anthropometry, Ergonomics and their Design of Work. London. Taylor and Francis.

181. Pink, S. (2004). Home Truths, Gender, domestic objects and everyday life. Oxford, U.K; New York, N.Y. , Berg.

182. Plimpton, C. L. and F. A. Hassan (1987). "Social Space: a determinant of house architecture." Environment and Planning B: Planning and Design **14**: 439-449.

183. Portes, A. (2000). "The two meanings of social capital." Sociological Forum **15**(1): 1-12.

184. Poulsen, M. and R. Johnston (2000). "Threshold Analysis approach to the objectification of social space: the structure of household types in Sydney." Environment and Planning B: Planning and Design 2000 **27**: 905-922.

185. Raj, D. (1972). The design of sample surveys: a Mcgraw-Hill series in probability and statistics. New York, Mcgraw-Hill Inc.

186. Rakodi, C. and P. Withers (1995). "Housing aspirations and affordability in Harare and Gweru: a contribution to housing policy formulation in Zimbabwe." Cities **12**(2): 185-201.

187. Rapoport, A. (1990). Systems of activities and systems of settings. Domestic Architecture and the use of space: An interdisciplinary cross-cultural study. S. Kent: 9-20.

188. Rapoport, A. and G. Hardie (1991). "Tswana Housing". Housing of the poor in the developing world. Method of analysis, case studies and policy. A. G. Tipple and K. G. Willis. London, New York. Routledge.

189. Ratti, C. (2004). Space Syntax: some inconsistencies. E l nvironment and Planning B: Planning and design. **31.** 487-499.

190. Renfrew, C. (1984). Approaches to Social Archaeology, Edinburgh University Press.

191. Richins, M. L. (1994a). "Valuing things: The Public and Private Meanings of Possessions." The Journal of Consumer Research **21**(3): 504-521.

192. Richins, M. L. (1994b). "Special possessions and the expression of material values." The Journal of Consumer Research **21**(3): 522-533.

193. Rogan, B. (1998). "Things with a History - and Other Possessions; Some notes on Public and Private aspects of Possessions among elderly people." Ethnologia Scandinavica **28**: 93-107.

194. Rosselin, C. (1999). The Ins and Outs of the Hall. At Home: An anthropology of domestic space. I. Cieraad: 53-59. Syracuse. Syracuse University Press.

195. Roth, K. (2001). "Material Culture and Intercultural Communication". Journal of intercultural relations. **25.** 563-580.

196. Roth, J. and R. Hashimshony (1987). "Comparison of existing three-room apartment plans with computer generated layouts." Environment and Planning B: Planning and Design **14**: 149-161.

197. Rudofsky, B. (1977). The prodigious Builder. London, Martin, Secker, and Warburg Ltd.

198. Sadovnik, A. R. (2001). "Basil Bernstein (1924-2000)." The quarterly review of Comparative Education **XXXI**(4): 687-703.

199. Sahlins, M. (1972). Stone age economics. Chicago, Aldine-Atherton.

200.Saussure De, F., Ed. (1913). On the nature of language in structuralism- A reader.

201.Schiltz, M. (1982). "Habitus and Peasantisation in Nigeria: A Yoruba Case Study." Man, New Series **17**(4): 728-746.

202.Schwerdtfeger, F. W. (1982). Housing in African Cities: a comparative study of houses in Zaria, Ibadan, and Marrakesh. Chicester, Wiley.

203.Seamon, D. (2003). "Review: - Bill Hillier, 1996. Space is a Machine." Environmental & Architectural Phenomenology Newsletter(Fall 2003).

204. Seo, K. W. (2003). Spatial Interpretation of Housing: the role of topological intuition in the evolution of the houses in Seoul. Unpublished thesis. Bartlett Graduate school of Architecture. London, University College London.

205.Shenk, D., K. Kuwakara, D. Zablotsky. (2004). "Older women's attachments to their home and possessions." Journal of Aging Studies **18**: 157-169.

206.Silver, H. (1993). "Homework and Domestic Work." Sociological Forum **8**(2): 181-204.

207.Sinai, I. (1998). "Using the home for income-generation; The case of Kumasi, Ghana." Cities **15**(6): 417-427.

208.Sinai, I. (2002). "The determinants of the number of rooms occupied by compound dwellers in Kumasi, Ghana: does working at home mean more rooms?" Journal of Applied Geography **22**: 77-90.

209.Smith, R. (1969). Kingdoms of the Yoruba. London,Metheun & Co Ltd.

210.Smith, L. T. (2005). "Imperialism, History, Writing and theory: the politics of language and literary studies" Postcolonialisms: an anthology of cultural theory and criticism Desai, G. and S. Nair. Oxford: Berg. 94-115.

211.Sorensen (1991). The meaning of Things: Material culture and symbolic expression. I. Hodder.

212.Steadman, P (1983). Architectural Morphology: an introduction to the geometry of building plans. London, Pion

213.Steadman, P., Peter A. Rickaby and Frank E. Brown (2000). "A classification of built forms." Environment and Planning B: Planning and Design **27**: 73-91.

214.Sudarkasa, N. (1973). Where women work: A study of Yoruba women in the marketplace and in the home, Museum of Anthropology, University of Michigan: 25-37.

215.Taher, B. and F. Brown (2003). The visibility graph: An approach for the analysis of traditional domestic M'zabite spaces. Space Syntax 4th International Symposium, London, Space Syntax Laboratory, University College London, London.

216.Tipple, A. G, and S. Speak (2005). "Definitions of Homelesness in developing countries". Habitat International. **29.** 337-352

217. Tipple, A. G. (2004). "Settlement upgrading and home-based enterprises: discussions from empirical data." Cities **21**(5): 371-379.

218. Tipple, A. G, B. Amole, D. Korboe, and H. Onyeacholem (1994). "House and Dwelling, Family and Household: towards defining housing units in West African Cities." Third World Planning Review **16**(4): 429-450.

219. Trager, L. (2001). Yoruba Hometowns: Community, Identity, and Development in Nigeria. Boulder, Lynne Rienner Publishers.

220. Trigueiro, E. (1997). 'Change in domestic space design: a comparative study of nineteeth and twentieth century in Britain and Recife'. (Unpublished thesis. Bartlett Graduate school of Architecture. London, University College London).

221. Turner, V., Ed. (1916). Symbols in African Ritual. Symbolic Anthropology.

222. Tversky, B. (2003). "Structures of mental spaces: how people think about space."Environment and Behaviour **35**(1): 62-80.

223. Uduku, O. (2005). "Modernist architecture and 'the tropical' in West Africa: the tropical architecture movement in West Africa, 1948-1970. Habitat International

224. Usman, A. A. (2004) "On the frontier of empire: understanding the enclosed walls of northern Yoruba, Nigeria". Journal of Anthropological Archaeology. **23,** 119-132.

225. Valadez, J. J. and R. Clignet (1984). "Household work as an ordeal: Culture of Standards Versus Standardization of Culture." The American Journal of Sociology **89**(4): 812-835.

226. Van Eijck, K. V. (1999). Socialization, education, and lifestyle: how social mobility increases the cultural homogeneity of status groups. Poetics. **26.** 309-328.

227. Eijck, K. V. and B. Bargeman (2004). "The changing impact of social background on lifestyle: 'culturalization' instead of individualization?" POETICS **32**: 439-461.

228. Van Leusen, M. (1996). "A typology of dwelling arrangements." Environment and Planning B: Planning and Design **23**: 143-164.

229. Vlach, J. M. (1976). "Affecting the architecture of the Yoruba." African Arts **10**.

230. Vlach, J. M. (1984). "The Brazilian House in Nigeria: The emergence of a 20th Century Vernacular House Type." Journal of American Folklore **97**(383): 1-23.

231. Wakeford, J. (1968). The Strategy of Social Inquiry: a new program in methods and measurements for the student of sociology. London, Macmillan and Co Ltd.

232. Wallendorf, M. and E. J. Arnould (1988). ""My Favorite Things": A Cross-Cultural Inquiry into Object Attachment, Possessiveness, and Social Linkage." Journal of Consumer Research **14**: 531-547.

233. Wieder, D. L. (1970). On Meaning by Rule. Understanding Everyday Life. J. D. Douglas. London, Routledge and Kegan Paul Ltd: 107-135.

234. Wilk, R. R. (1989). The household economy (reconsidering the domestic mode of production). Wilk, R. R. Boulder, Colo; London, Westview Press.

235. Willett, F. (1968). Radio-carbon dating in Nigeria, Thurston Shaw.

236. Wilson, M. A. and N. E. MacKenzie (2000). "Social attributions based on domestic interiors." Journal of Environmental Psychology. **20** 343-354. Academic Press.

237. Wood, D. and R. J. Beck (1994). Home Rules. Harrisonburg, Virginia, | The John Hopkins University Press.

238. Yates, T. (1991). Habitus and Social Space. The meaning of Things: Material culture and symbolic expression. I. Hodder.

239. Young, R. J. C. (2001). Postcolonialism: an historical introduction. Oxford, Blackwell.

240. Zimmerman, D. H. and M. Pollner (1970). The Everyday World as a Phenomenon. Understanding Everyday Life: Toward the reconstruction of Sociological Knowledge. J. D. Douglas. London, Routledge and Kegan Paul Ltd.

Website Addresses (for some of the images used- noted in footnotes in the thesis).

1. www.lib.utexas.edu/maps/nigeria/html produced by U.S. Central Intelligence Agency.

2. www.greatestcites.com (27 december 2005)

3. www.metmuseum.org (27 December 2005)

APPENDIX A: - QUESTIONNAIRE

STORAGE IN THE DOMESTIC SPACE

The object of this survey is to find out about storage patterns in residential units in Yorubaland as part of a research programme which seeks to achieve a better understanding of traditional and contemporary architecture. Your cooperation and opinion would be most appreciated.

Section A:General information about the household and dwelling unit:

Sample No:....

Area of town:...Area A...Area B...Area C...Area D.

Name of street:.:.....

Date:.....

1) Sex of respondent ....Male ....Female

2) Age of respondent:15-24yrs, 25-34yrs, 35-44yrs over 45yrs.

3) Educational level of respondent:....primary school level
....secondary school level
....post secondary(college)
.... " " (university)
....other(specify).....

4) Relationship of the respondent to the head of the household.....

5) Type of unit:.... self-contained flat,
.... multi-family tenement house,
.... detached house....no of floors
.... semi-detached duplex(flats),
.... compound with related families.

6) Building construction: ....adobe construction
....mud blocks(unfired)
....mud blocks(fired)
....concrete blocks
....other.....

7) Wall finish: ....cement plaster finish(painted)
....cement plaster finish(unpainted)
....exposed walling

....other.....

8) Structural condition:

....very poor ....fair ....good ....very good

9) How long has the household been living in this place?

...less than 4yrs...5-9yrs...10-14yrs...more than 15yrs.

10) Tenure:... owner-occupied(built),

.... owner-occupied(purchased)

.... owner-occupied(inherited)

.... rented,

.... jointly owned by extended family

11) Is Commercial use present in the building?

....present, ...not present

12) If present,what type of outlet is it?

....retail, ...wholesale.

13) Is the outlet owned by a member of the household?

....yes, ...no

<u>Section B</u>: This section deals with the users general satisfaction with the dwelling unit.

14) What do you like about your house?.....

.....

15) Why?.....

.....

16) What do you dislike about your house?.....

.....

17) Why?.....

.....

18) How would you rate the level of satisfaction with your house in general(please circle 1 for very poor to 5 for excellent)

very poor(1) poor(2) satisfactory(3) good(4) excellent(5)

19) How would you rate the level of efficiency of your house with respect to the following activities?

very poor(1) poor(2) satisfactory(3) good(4) excellent(5)					
A)receiving guests	1	2	3	4	5
B)eating	1	2	3	4	5
C)sleeping	1	2	3	4	5

D)cooking	1	2	3	4	5
E)family relaxation	1	2	3	4	5
F)other(specify)	1	2	3	4	5
.....	1	2	3	4	5
.....	1	2	3	4	5

20) How would you rate the level of satisfaction with the storage provided in your house in terms of the following?

shelves	1	2	3	4	5
cupboards	1	2	3	4	5
wardrobes	1	2	3	4	5
storerooms	1	2	3	4	5
accessibility	1	2	3	4	5
env. conditions	1	2	3	4	5
location	1	2	3	4	5
other.....	1	2	3	4	5
.....	1	2	3	4	5

21) What do you consider to be the most important factors about storage provision?.....

22) How would you rate the level of satisfaction with the sizes of the rooms in the house?(list rooms below)

living room/parlour	1	2	3	4	5
.....	1	2	3	4	5
.....	1	2	3	4	5
.....	1	2	3	4	5
.....	1	2	3	4	5
.....	1	2	3	4	5
.....	1	2	3	4	5
.....	1	2	3	4	5

23) Is the house the same way it was when you moved in or have you made any alterations and/ or additions?

...alterations made ....No alterations

24) If any changes have been made, What is the nature of the changes made?

and who was responsible for the changes? (circle H- household, O-owner if different, P- previous users). tick all appropriate options

....rooms added to house P O H
....new physical supports(shelves, cupboards etc).P O H
....spaces within the house altered P O H
....spaces in the house converted to other use P O H
....The exterior(painting the walls etc.) P O H
....Building rebuilt in new material P O H

Please indicate these changes on plan.

25) Why did you make the changes?.....

26) Tick all the changes that you would consider most useful in the house at this time if the means were available.

....change of access,
....the exterior,
....add number of rooms
....rebuild house completely,
....add new storerooms,

<u>SECTION C</u>: This section deals with the relationship between activities and objects in the domestic space in detail.

27A) What do you call each space?
B) What activities are done in each space?
C) What do you keep in each space?
D) Are visitors received and entertained in each space?(tick Y-for visitor access, N-no visitor access and M or F for male or female access only).
E) How satisfied are you with storage provided in each space on a scale of 1 to 5?

A)Label	B)Activity	C)Objects(s)	D)Y/N	E)1-5	
					1
					2

C) Are you satisfied with the locations used for all these activities?

D) Where would be the best options for the activities that are in unsatisfactory locations?

A)activities	B) reason for importance	C)Y/N	D)ideal
1			
2			
3			
4			
5			

31A) Please list the Three most important items to the family in order of importance.

B) Why are they important?

C) Where are they located?, please indicate P for permanent or T for transitional location.

D) Are you satisfied with all these locations?

E) Where would be the best options for the activities that are in unsatisfactory locations

A)items	B)reason for importance	C)location	D)Y/N	E)ideal
1				
2				
3				
4				
5				

32) Do you use any of the spaces outside the house for activities or for keeping things?

....Yes, ...No(if no, go to Q.35)

33) What type of items are stored outside?.....

.....

34) What type of activities take place outside?.....

.....

35) Is this convenient?

....Yes ....No ....Don't know.

36) Do you have bulky items that require storage?

....Yes, ...No

37) If yes, what are they?
...food...Household supplies...retail goods...other.....

38A) Where do you keep them?
B) Do you think these are the ideal locations?
C) Where would the ideal locations be?

A)location	B)Y/N	C)ideal location

39) What other activities or items have not been mentioned yet in this survey and are not provided for in your home?.....
.....

40) What kind of location/storage is required for these items?.....

41) Is there any need for storage for items no longer used or hardly used? ....Yes ....No.

42) Where do you put these items at present?.....

43) How important do you consider storage for these items?
...very important...quite important...relative important.
...not important.

44) How important do you consider spaces outside the house
...very important...quite important...relatively important ....not important

45) Why?.....

SECTION D: This section deals with detailed information about the family

46a) Name of household head.....
b) How many adult men live with you in the house? ....

c) How many adult women live in the household? ....
d) Indicate the educational level of all persons specified.
(P-pry level,S-sec educ, P-post sec. educ.)

adult(m) relationship marital status occupation/trade (D)
(over 18) to head educ.

---

adult(f)relationship marital occupation children children(D) ___
to head status at school at home educ

---

47) How many members of the household are ... under 8yrs,
...children between 8-18 yrs,...children over 18yrs

48) How much do you spend on feeding in a month?
....Less than 2,999 ....Between 3,000-5,999
....Between 6,000-10,000 ....Over 10,000
49) How much do you spend generally in a month?
....Less than 2,999 ....Between 3,000-5,999
....Between 6,000-10,000 ....Over 10,000

THANK YOU.

APPENDIX B: - CHARTS AND TABLES

SUMMARY CHART FOR (DL)-CORRIDOR (SEGREGATED KITCHEN) GENOTYPE

(DL)-CORRIDOR (SEGREGATED KITCHEN) GENOTYPE																
house number		No of rooms(approx area incl)					No of cells		BDF*	Most integrated	transition:	No. of	No. of		
	Corridor	Sitting	Bedroom	Kitchen	Shower	Toilet		mean		function/transition	function ratio	rings	internal rings	geometric type	Total depth
No 003	1.144	1.301	0.867	0.8	0.8	0.674	13	0.992	0.656	Sitting- function	0.33	2	1	compact plan	5
No 004	1.144	1.301	0.867	0.8	0.8	0.674	13	0.992	0.656	Sitting- function	0.33	2	1	compact plan	5
No 007	1.144	1.301	0.867	0.8	0.8	0.674	13	0.992	0.656	Sitting- function	0.33	2	1	compact plan	5
No 008	1.144	1.301	0.867	0.8	0.8	0.674	13	0.992	0.656	Sitting- function	0.33	2	1	compact plan	5
N o28	1.127	1.127	0.624	0.772	0.521	0.521	20	0.688	0.847	Corridor- transition	0.5	0	0	compact plan	7
No 033	0.943	0.717	1.1	0.98	0.592	0.555	12	1.329	0.582	bedroom- function	0.13	3	0	compact plan	3
no 041	1.711	1.062	1.062	0.825	0.825	0.825	24	1.022	0.841	Corridor- transition	0.22	5	4	double-loaded corridor	5
No 042	3.923	1.274	1.308	1.235			14	1.605	0.628	Corridor- transition	0.08	2	0	double-loaded corridor	2
No 043	11	1.375	1.222		0.786		9	2.314	-0.103	Corridor- transition	0.14	3	2	double-loaded corridor	2
No 045	3.134	0.681	1.086	0.922		1.045	11	1.27	0.544	Corridor- transition	0.11	0	0	double-loaded corridor	4
No 048	5.884	1.471	1.471	1.121	1.121	1.121	14	1.791	0.400	Corridor- transition	0.08	5	4	double-loaded corridor	2
No 050	1.177	1.223	1.202				28	1.135	0.756	passage- transition	0.14	2	0	double-loaded corridor	5
No 051	1.177		0.929				34	1.059	0.803	Corridor- transition	0.17	3	2	double-loaded corridor	6
No 052	3.49	1.25	0.499				5	1.208	0.341	Corridor- transition	0.25	0	0	double-loaded corridor	3
No 053	1.387		0.978				17	1.034	0.840	Stairs- transition	0.42	9	8	double-loaded corridor	5
No 059	2.5	1.216	1.216	0.938	0.938	0.9	21	1.182	0.743	passage- transition	0.18	3	2	double-loaded corridor	3
No 060	2.511	1.228	1.228	1.042	1.042	1.042	24	1.208	0.760	Corridor- transition	0.16	1	0	double-loaded corridor	4
No 061	1.892	0.946	0.946		0.671		13	0.994	0.773	Corridor- transition	0.3	4	4	double-loaded corridor	4
No 062	3.318		1.021	0.948	0.948		10	1.383	0.649	Corridor- transition	0.14	1	0	double-loaded corridor	3
No 063	2.465	1.233	1.233			0.863	23	1.273	0.765	Corridor- transition	0.17	8	8	double-loaded corridor	5
No 064	1.724	0.493	0.705				7	0.855	0.692	Corridor- transition	0.17	1	0	double-loaded corridor	3
No 065	2.353		1.177	0.949	0.925		23	1.132	0.717	Corridor- transition	0.18	1	0	double-loaded corridor	5
No 066	1.77		1.111	0.985	0.985	0.985	39	1.127	0.881	Corridor- transition	0.14	3	1	double-loaded corridor	6
No 067	1.332		0.962				42	0.937	0.752	Coutyard-function	0.14	2	2	double-loaded corridor	8
No 069	1.743	1.111	1.111	0.914	0.914	0.914	39	1.066	0.843	Corridor/stairs- transition	0.1	8	8	double-loaded corridor	6
No 072	1.991	1.021	0.948	0.948	0.698	0.698	10	1.085	0.502	Corridor- transition	0.13	0	0	double-loaded corridor	5
No 073	1.859	1.432	1.432	1.107	0.917	0.917	41	1.312	0.726	Corridor- transition	0.15	11	10	double-loaded corridor	7
No 077	1.626		1.107	0.871	0.871	0.871	28	1.084	0.826	Corridor- transition	0.13	0	0	double-loaded corridor	6
No 078	2.511	1.228	1.228	1.042	1.042	1.042	24	1.208	0.760	Corridor- transititon	0.16	0	0	double-loaded corridor	5
No 080	2.303		1.151	0.848	0.848		22	1.119	0.675	Corridor- transition	0.19	3	1	double-loaded corridor	5
NC081	1.872	0.946	0.926				13	1.035	0.841	transition	0.38	2	1	double-loaded corridor	5
NC083	2.238	1.045	0.5		0.825		11	1.119	0.686	transition	0.25	2	0	orowa-type	3
NC084			0.996	0.877	0.877	0.877	24	1.073	0.754	transition	0.1			orowa-type	5
NC085*							5	0	#DIV/0!	transition	0			orowa-type	2
NC087	1.475	1.475	0.737	0.577	0.577		10	0.812	0.727	transition	1	1	1	double-loaded corridor	6
NC089*							9	0	#DIV/0!	transition	0.13			double-loaded corridor	2
No093	3.917	1.119	1.119	1.045	0.979		11	1.289	0.529	transition	0.1	1	0	double-loaded corridor	2
No101	2.933	1.403	1.011	1.243	1.291		17	1.358	0.546	transition	0.36	1	0	orowa-type	3
No102*							5	0	#DIV/0!	transition	0.25			double-loaded corridor	2
No109*			0.806	0.493			8	0.738	0.726	transition	0.67			orowa-type	5
No113	11	1.222	1.222				9	1.549	-0.264	transition	0.17	2	1	double-loaded corridor	3
No115*							8	0	#DIV/0!	transition	0.4			double-loaded corridor	2
No116	2.079		1.039	0.862	0.822	0.822	18	0.975	0.687	transition	0.36			double-loaded corridor	5
No 138	2.312	1.892	0.991	0.991	0.671		13	0.997	0.643	Corridor- transition	0.2	0	0	elongated plan	5
No 148	1.963	1.262	1.01	0.768	1.01		18	1.068	0.772	Living- function	0.18	3	0	elongated plan	4
No 150	1.963	1.262	1.01	0.768	1.01		18	1.068	0.772	Corridor- transition	0.18	3	0	elongated plan	4
No 153	1.892	1.892	0.905	0.832	0.905	0.905	13	0.981	0.751	Corridor- transition	0.1	1	0	elongated plan	4
No 155	2.396	1.883	1.054	0.879	0.904	0.753	15	1.099	0.628	Corridor- transition	0.18	2	0	mixed	4
No 156	1.613	1.344	0.896	0.717	0.772	0.896	17	0.901	0.759	Corridor- transition	0.15	1	0	mixed	5
No 157	1.722	1.273	0.915	0.791	0.915		16	1.059	0.829	Corridor- transition	0.22	3	0	elongated plan	3
No 159	1.053	1.013	0.711	0.687	0.594	0.837	19	0.785	0.814	Corridor- transition	0.45	1	0	elongated plan	6
No 039*	1.84		1.015	0.977	1.015	1.035	23	1.151	0.755	Corridor- transition	0.22	1	0	double-loaded corridor	5

SUMMARY CHART FOR (SL)-CORRIDOR (INTEGRATED KITCHEN) GENOTYPE

(SL)-CORRIDOR (INTEGRATED KITCHEN) GENOTYPE													
house number	Corridor	Sitting	Kitchen	Bedroom	Toilet	Shower	total no of cells	BDF factor*	function/transition	transiton:function ratio	rings	internal rings	overall depth
No 009	1.674	1.151	0.936	0.708	0.683	0.683	23	0.807	Corridor- transition	0.20	4	0	6
No 012	1.528	1.151	0.936	0.793	0.683	0.683	24	0.807	Corridor- transition	0.19	3	0	5
No 015	2.341	1.301	1.041	0.946	1.041	1.041	13	0.682	Corridor- transition	0.18	2	0	3
No 016	2.75	1.222	1.222	0.917	0.688	0.688	9	0.573	Corridor- transition	0.33	1	0	4
No 017	2.588	0.887	0.806	0.887	0.806	0.806	8	0.596	Corridor- transition	0.17	0	0	3
No 018	2.75	1.222	1.222	0.917	0.688	0.688	9	0.573	Corridor- transition	0.33	1	0	4
No 019	2.75	1.222	1.222	0.917	0.688	0.688	9	0.563	Corridor- transition	0.33	1	0	4
No 020	1.48	1.152	0.922	0.896	0.787	0.787	17	0.816	Corridor- transition	0.27	1	0	6
No 022	2.75	1.222	1.222	0.917	0.688	0.688	9	0.573	Corridor- transition	0.33	1	0	4
No 023	2.75	1.222	1.222	0.917	0.688	0.688	9	0.573	Corridor- transition	0.33	1	0	4
No 024	2.273	1.399	0.957	0.785	0.699	0.699	12	0.584	Corridor- transition	0.38	0	0	5
No 025	3.318	1.327	1.327	1.021	0.737	0.737	10	0.494	Corridor- transition	0.29	1	0	4
No 032	1.551	1.255	1.255	0.85	0.85	0.85	15	0.727	Corridor- transition	0.20	1	0	5
No 035	2.212	0.948	0.885	0.885	0.577	0.885	10	0.630	Corridor- transition	0.13	0	0	4
No 036	2.212	1.106	1.106	0.885	0.885	0.885	10	0.618	Corridor- transition	0.13	1	0	4
No 038	2.2	2.200	1	0.846	0.846	0.846	9	0.689	Corridor- transition	0.14	1	0	4
No 076	2.177	1.2	0.98	1.153	0.98	0.98	25	0.703	Corridor- transition	0.18	2	0	6
No088	3.031	2.021	1.07	0.99	0.758	0.758	12	0.573	transition	0.38	0	0	3
No 122	2.344	2.264	1.327	1.305	0.755	1.06	19	0.571	Corridor- transition	0.21	4	1	4
No 123	2.023	1.301	1.301	0.991	0.65	0.65	13	0.660	Corridor- transition	0.38	2	1	5
No 124	2.023	1.301	1.301	0.991	0.65	0.65	13	0.660	Corrridor- transition	0.38	2	1	5
No 125	1.837	1.212	1.212	0.868	0.627	0.627	12	0.711	Corridor- transition	0.43	2	1	5
No 126	2.023	1.301	1.301	0.991	0.65	0.65	13	0.660	Corridor- transition	0.38	2	1	5
No 127	2.023	1.301	1.301	0.95	0.65	0.65	13	0.660	Corridor- transition	0.38	2	1	5
No 128	1.837	1.212	1.212	0.868	0.627	0.627	12	0.711	Corridor- transition	0.43	2	1	5
No 129	1.837	1.212	1.212	0.909	0.627	0.627	12	0.711	Corridor- transition	0.43	2	1	5
No 130	2.023	1.301	1.301	0.991	0.65	0.65	13	0.660	Corridor- transition	0.38	2	1	5
No 131	2.023	1.301	1.301	0.929	0.65	0.65	13	0.660	Corridor- transition	0.38	2	0	5
No 133	2.344	2.264	1.327	1.305	0.755	1.06	19	0.571	Corridor- transition	0.21	4	1	4
No 135	1.34	1.204	1.049	0.854	0.886	0.854	29	0.827	Corridor- transition	0.33	5	0	6
No 136	1.34	1.18	1.011	0.851	0.9	0.851	32	0.839	Corridor- transition	0.35	5	0	6
No 140	1.369	1.738	1.07	0.993	0.811	0.753	20	0.816	Living- function	0.21	3	0	4
No 141	2.942	1.811	1.07	1.121	0.873	0.841	14	0.542	Corridor- transition	0.18	0	0	3
No 142	2.942	1.811	1.07	1.121	0.873	0.841	14	0.542	Corridor- transition	0.18	0	0	3
No 143	2.942	1.811	1.07	1.121	0.873	0.841	14	0.542	Corridor- transition	0.18	0	0	3
No 144	2.942	1.811	1.07	1.121	0.873	0.841	14	0.542	Corridor- transition	0.18	0	0	3
No 145	2.942	1.811	1.07	1.121	0.873	0.841	14	0.542	Corridor- transition	0.18	0	0	3
No 149	2.961	2.264	1.327	1.242	0.846	1.049	19	0.626	Corridor- transition	0.19	0	0	4
No 158	1.339	1.204	1.049	0.854	0.886	0.854	29	0.827	Corridor- transititon	0.33	5	0	6
No 160	2.344	2.264	1.327	1.305	0.755	1.06	19	0.571	Corridor- transition	0.21	4	1	4

SUMMARY CHART FOR (DL)-CORRIDOR (INTEGRATED KITCHEN) GENOTYPE

(DL)-CORRIDOR (INTEGRATED KITCHEN) GENOTYPE															
house no	Corridor	Kitchen	Shower	Toilet	Sitting	Bedroom	total no of cells	mean	BDF*	function/transition	transition:function ratio	rings	internal rings	Total depth	geometric type
No 010	1.045	1.084	0.716	.	0.751	0.728	16	0.957	0.754	Corridor- transition	0.27	2	0	5	mixed
No 014*	1.562	1.077	0.977	0.977	0.869	0.869	42	0.994	0.868	Corridor- transition	0.22	1	0	7	double-loaded corridor
No 034	3.637	0.957	1.212	.	2.273	1.162	21	0.702	0.848	Corridor- transition	0.29	3	0	8	mixed
No 040*	1.567	1.327	1.327	1.327	0.914	0.914	35	1.227	0.772	Corridor- transition	0.25	10*		8	6 double-loaded corridor
No 044	1.267	0.84	0.83	0.83	0.664	0.821	28	0.998	0.797	Corrridor- transition	0.18	1	0	6	double-loaded corridor
No 046	.	.	.	.	.	.	40	1	0.736	exterior	0.19	0	0	5	double-loaded corridor
No 054	1.216	1.463	.	1.463	.	0.855	36	1.368	0.653	Yard- function	0.11	2	0	5	double-loaded corridor
No 055	1.611	0.999	0.885	0.885	0.85	0.976	32	1.144	0.769	Corridor- transition	0.13	1	0	5	double-loaded corridor
No 057	1.205	1.121	0.698	.	.	0.698	18	1.426	0.701	passage- transition	0.23	4	0	4	double-loaded corridor
No 070	1.986	1.303	1.303	1.303	1.264	1.043	20	1.354	0.656	balcony- transition	0.33	4	2	4	double-loaded corridor
No 079	0.97	1.07	1.07	1.07	.	0.673	20	1.155	0.726	exterior- transition	0.25	1	1	5	double-loaded corridor
No100	3.363	1.177	1.177	1.177	.	1.177	14	1.394	0.565	transition	0.57	1	0	3	double-loaded corridor
No105	5.095	0.849	.	0.566	.	0.849	6	1.097	0.056	transition	0	0	0	2	double-loaded corridor
No106	1.475	1.629	.	.	0.829	0.531	10	0.937	0.752	function	0.33	.	.	3	orowa-type
No 154	1.231	1.833	0.76	0.646	0.895	0.987	19	1.008	0.751	Kit /corr. comb.	0.2	3	0	5	mixed

SUMMARY CHART FOR LIVING-ROOM GENOTYPE

LIVING-ROOM GENOTYPE															
house number	**Sitting**	**Corridor**	**Kitchen**	**Bedroom**	**Toilet**	**Shower**	**totoal no of cells**	**mean**	**BDF***	**function/transition**	**transition:function ratio**	**rings**	**internal rings**	**Total depth**	**geometric type**
No 001	1.681	1.308	0.942	0.797	0.905	0.733	14	0.904	0.719	Sitting- function	0.20	0	0	5	elongated plan
No 002	2.598	2.598	1.01	1.01	0.909	0.909	12	1.186	0.639	Corridor- transition	0.22	1	1	4	compact plan
No 005	2.354		1.023	0.785		0.785	13	0.989	0.703	Sitting- function	0.18	1	0	3	compact plan
No 006	1.536	1.241	1.195	0.717	0.717	0.603	17	0.866	0.750	Sitting- function	0.25	1	1	7	compact plan
No 013	2.273	2.021	1.07	0.933		0.768	12	1.046	0.663	Sitting- function	0.11	1	0	5	mixed
No 026	1.653	1.137	1.07	0.791	0.674	0.674	12	0.893	0.808	Sitting- function	0.11	1	0	4	compact plan
No 029	1.127	1.127	0.772	0.624	0.521	0.521	20	0.688	0.847	Corridor- transition	0.50	0	0	7	compact plan
No 030	1.127	1.127	0.772	0.617	0.521	0.521	20	0.688	0.847	Corridor- transition	0.50	0	0	7	compact plan
No 031	1.127	1.127	0.772	0.605	0.521	0.521	20	0.688	0.847	Corridor- transition	0.50	0	0	7	compact plan
No 037	1.113	0.978	0.717	0.673	0.587	0.546	17	0.722	0.824	Sitting- function	0.36	0	0	7	compact plan
No 132	1.741	1.205	1.205	0.681		0.681	12	0.898	0.762	Corridor- transition	0.43	1	0	5	compact plan(courtyard)
No 139	1.959	1.567	0.979	0.895	0.653	0.607	11	0.898	0.674	Living- function	0.25	0	0	5	mixed
No 146	1.896	1.272	1.106	0.781		0.553	10	0.911	0.691	Living- function	0.29	1	0	5	mixed
No 147	1.299	1.061	0.827	0.587	0.587	0.587	12	0.783	0.846	Living- function	0.22	1	0	5	mixed

SUMMARY CHART FOR (DL)-CORRIDOR (SEGREGATED FUNCTION SPACES) GENOTYPE

(DL)-CORRIDOR (SEGREGATED FUNCTION SPACES) GENOTYPES														
house number	corridor	Sitting	Bedroom	Kitchen	Toilet	bath	total no of cells	mean integration	BDF*	transition:function ratio	rings	internal rings	overall depth	geometric type
No047	3.318	1.021	1.021	1.021	1.021	1.021	10	1.496	0.694	0.13	2	1	2	double-loaded corridor
No049	3.318	1.021	1.021	1.021	1.021	1.021	10	1.496	0.694	0.13	1	0	2	double-loaded corridor
No056	2.418	1.209	1.209	.	.	.	22	1.164	0.746	0.17	5	4	4	double-loaded corridor
No068	2.017	1.008	1.008	1.008	.	.	17	1.128	0.777	0.25	0	0	5	double-loaded corridor
No071	2.465	1.204	1.204	1.204	0.863	.	23	1.257	0.763	0.17	1	0	4	double-loaded corridor
No092	3.209	1	1	.	.	.	9	1.284	0.550	0.29	.	.	2	orowa-type
No094*	.	.	.	.	.	.	5	0	#DIV/0!	0.25	1	1	2	double-loaded corridor
No098	1.198	0.775	0.549	.	.	0.964	15	0.817	0.839	0.40	.	.	5	double-loaded corridor
No099	3.424	0.981	0.981	.	.	0	14	1.388	0.392	0.30	.	.	3	double-loaded corridor
No103	3.318	.	1.021	1.021	1.021	1.021	10	1.322	0.662	0.13	1	0	3	double-loaded corridor

SUMMARY CHART FOR OROWA GENOTYPE

OROWA GENOTYPE

house number	orowa	Sitting	Bedroom	Kitchen	Toilet	total no of cells	BDF*	function/transition	transition:function ratio	rings	internal rings	overall depth	geometric type
No 058	1.644	.	0.959	0.75	0.75	23	0.748	stairs-transition	0.31	1	0	6	orowa-type
NO082	2.218	0.986	0.554	.	.	8	0.606	function	0.00	.	.	3	orowa-type
NO086	2.957	.	0.887	.	.	8	0.625	function	0.00	.	.	3	orowa-type
NO090	3.318	.	1.475	.	0.603	10	0.440	function	0.11	.	.	3	orowa-type
No091	3.667	1.222	0.824	.	0.647	9	0.352	function	0.00	.	.	3	orowa-type
No096	3.134	1.567	0.863	1.424	.	11	0.511	function	0.13	.	.	4	orowa-type
No097	2.081	1.301	0.671	.	.	13	0.652	function	0.20	.	.	4	orowa-type
No104	2.212	0.885	0.857	.	0.698	10	0.721	function	0.00	.	.	3	orowa-type
No107	2.957	1.109	0.591	.	.	8	0.439	function	0.14	.	.	3	orowa-type
No108	6.896	1.149	1.149	.	.	7	-0.079	function	0.00	.	.	2	orowa-type
No110?	2.14	0.785	1.002	.	0.713	14	0.733	function	0.00	.	.	5	orowa-type
No111	5.223	1.045	1.315	.	.	11	0.325	function	0.25	.	.	3	orowa-type
No112	5.223	1.045	1.064	.	.	11	0.325	function	0.25	.	.	3	orowa-type
No114	2.75	1	1.009	0.846	0.846	9	0.691	function	0.00	.	.	2	orowa-type
No117?	1.962	.	0.79	0.736	0.574	14	0.651	function	0.67	.	.	6	orowa-type
No118	2.079	.	1.039	0.884	0.884	18	0.713	transition	0.23	.	.	5	orowa-type
No120	2.354	.	1.023	1.023	0.905	15	0.690	function	0.07	.	.	3	orowa-type

Some of the questionnaire results

Q21

Most important factors affecting storage

factors	count	%tage
large size of rooms	37	18.8%
provision of storeroom	29	14.7%
adequate shelving	24	12.2%
adequate wardrobes	19	9.6%
environmental conditions	13	6.6%
adequate shelves in the kitchen	12	6.1%
location	10	5.1%
storage designated for food	10	5.1%
security	9	4.6%
other*	9	4.6%
accessibility	8	4.1%
designated storeroom for each use	7	3.6%
specialised storage in each rm	5	2.5%
separate storage for specific items	3	1.5%
consideration of household size	2	1.0%
Total	197	100.0%

Q23

Have alterations been made to the dwelling by the household?

	count	%tage
Yes, alterations made	92	57.5%
No alterations made	66	41.3%
No response	2	1.3%
Total	160	100.0%

Q24

Types of changes made to dwelling

Types of changes	count	%tage
new shelves, cupboards, etc	55	53.4%
spaces converted to other use	21	20.4%
exterior(painting walls etc)	13	12.6%
rooms added to house	6	5.8%
spaces within house altered	5	4.9%
building rebuilt in new material	3	2.9%
total number of alterations	103	100.0%

Q33

Frequency of objects stored outside the Domestic Space

Object	total sample	percentage	campus	percentage	estates	percentage	akarabata	percentage	enuwa	percentage
animals	20	20.0%	5	17.9%	7	21.9%	7	26.9%	1	7.1%
junk	16	16.0%	7	25.0%	8	25.0%	1	3.8%	0	0.0%
cooking utensils&pots	10	10.0%	2	7.1%	3	9.4%	4	15.4%	1	7.1%
cooking fuel	10	10.0%	3	10.7%	0	0.0%	3	11.5%	4	28.6%
other-artwk, plants	10	10.0%	5	17.9%	1	3.1%	2	7.7%	2	14.3%
cars/bikes	6	6.0%	1	3.6%	4	12.5%	0	0.0%	1	7.1%
crates & cartons	6	6.0%	4	14.3%	2	6.3%	0	0.0%	0	0.0%
portable water	6	6.0%	0	0.0%	2	6.3%	4	15.4%	0	0.0%
furniture	6	6.0%	0	0.0%	0	0.0%	2	7.7%	4	28.6%
books/study material	3	3.0%	0	0.0%	3	9.4%	0	0.0%	0	0.0%
buckets & baskets	3	3.0%	0	0.0%	1	3.1%	2	7.7%	0	0.0%
farm/garden tools	2	2.0%	1	3.6%	1	3.1%	0	0.0%	0	0.0%
food	2	2.0%	0	0.0%	0	0.0%	1	3.8%	1	7.1%
Total	100	100%	28		32		26		14	

Q34

Frequency of activities carried out outside the Domestic Space

Activity	Total sample	percentage	campus	percentage	estates	percentage	akarabata	percentage	enuwa	percentage
laundry	69	29.7%	18	28.1%	7	15.6%	22	38.6%	22	33.8%
relax/sports	41	17.7%	11	17.2%	8	17.8%	11	19.3%	11	16.9%
large scale cooking	39	16.8%	10	15.6%	9	20.0%	9	15.8%	11	16.9%
animal rearing	25	10.8%	5	7.8%	5	11.1%	6	10.5%	9	13.8%
gadening/farming	21	9.1%	13	20.3%	7	15.6%	0	0.0%	1	1.5%
trading	13	5.6%	0	0.0%	2	4.4%	4	7.0%	7	10.8%
ceremonies/parties	8	3.4%	2	3.1%	2	4.4%	2	3.5%	2	3.1%
storage	8	3.4%	1	1.6%	3	6.7%	2	3.5%	2	3.1%
carpark/wash	4	1.7%	3	4.7%	0	0.0%	1	1.8%	0	0.0%
none	4	1.7%	0	0.0%	0	0.0%	0	0.0%	4	6.2%
other	3	1.3%	1	1.6%	2	4.4%	0	0.0%	0	0.0%
Total	232	101%	64		45		57		65	

*based on the number of times item/objects were mentioned by respondents

Q37

Frequency distribution of types of bulky items.

Types of Bulky items	count	%tage
Food	11	16.9%
Household supplies*	3	4.6%
retail goods	9	13.8%
other**	42	64.6%
not applicable	101	
total	65	

* household supplies includes- detergents, toiletries,sponges etc.

** other- cars, building material(sanitary ware, cement supplies etc)

Q25

Table 14a- Why were changes were made to domestic space?

Reasons	Count	%tage
function needed & not provided	48	44.4%
repair needed	25	23.1%
Inadequate provision by owner	11	10.2%
aesthetic reasons	7	6.5%
privacy	5	4.6%
user-owned property	4	3.7%
owner/user wanted change	3	2.8%
increase security	2	1.9%
poor ventilation	1	0.9%
inadequate external space	1	0.9%
adopt usual arrangemt. associated with rm	1	0.9%
Total	108	100.0%

*69 households did not answer this question(39% of tota

** 19 households gave more than one optio

Q26

Ideal changes to dwelling recommended by respondents

Types of changes	count	%tage
maintainance work	3	2.6%
add new storerooms	8	7.0%
change of access to the house	9	7.8%
nothing	9	7.8%
exterior(painting walls etc)	26	22.6%
building rebuilt in new materia	27	23.5%
add new rooms to house	33	28.7%
no response	63	*
total no. of households that res	115	100.0%

Q32

Frequency of use of external spaces based on sex of respondent

Use of external space	Male	%tage	Female	%tage
Yes, use ext.space	60	95.2%	88	90.7%
No, Do not use ext. space	3	4.8%	9	9.3%
Total	63		97	

Q42

Location of spare objects are kept at present

Location	count	%tage
store	42	21.3%
bedrooms	35	17.8%
outside	35	17.8%
kitchen	32	16.2%
away from the house	31	15.7%
all around the house	8	4.1%
orowa	7	4%
garage	6	3.0%
varanda	1	0.5%
total	197	

Q45

Why is it important to have spaces around the house?

Reasons	no. of response	%tage
To play/relax	56	25.8%
host parties	32	14.7%
ventilation	30	13.8%
for storage	35	16.1%
quality of life	23	10.6%
farming/gardening/animals	11	5.1%
for trading activity	9	4.1%
large scale cooking&food prep.	8	3.7%
car parking	4	1.8%
not important, the house is okay.	3	1.4%
both indoor&outdoor are impt.	3	1.4%
for security purposes	3	1.4%
Total	217	

Some of the questionnaire results

Q20

Table a

Level of satisfaction with storage (shelves)

	count	%tage
very poor	9	11.3%
poor	10	12.5%
satisfactory	23	28.8%
good	28	35.0%
excellent	10	12.5%
total	80	

*total excluding non-responses.

Table b

Level of satisfaction with storage (cupboards)

	count	%tage
very poor	7	8.2%
poor	9	10.6%
satisfactory	23	27.1%
good	35	41.2%
excellent	11	12.9%
total	85	

*total excluding non-responses.

Table c

Level of satisfaction with storage (wardrobes)

	Total count	%tage
very poor	7	8.5%
poor	8	9.8%
satisfactory	22	26.8%
good	27	32.9%
excellent	18	22.0%
total	82	

*total excluding non-responses.

Table d

Level of satisfaction with storage (storerooms)

	count	%tage
very poor	13	14.3%
poor	11	12.1%
satisfactory	26	28.6%
good	25	27.5%
excellent	16	17.6%
total	91	

*total excluding non-responses.

Table e

Level of satisfaction with storage (access)

	count	%tage
very poor	1	0.9%
poor	10	9.3%
satisfactory	33	30.8%
good	49	45.8%
excellent	14	13.1%
total	107	

*total excluding non-responses.

Table f

Level of satisfaction with storage
(environmental conditions)

	count	%tage
very poor	4	3.7%
poor	11	10.2%
satisfactory	41	38.0%
good	40	37.0%
excellent	12	11.1%
total	108	

*total excluding non-responses.

Table g

Level of satisfaction with storage (location)

	count	%tage
very poor	1	0.9%
poor	9	7.9%
satisfactory	29	25.4%
good	53	46.5%
excellent	22	19.3%
total	114	

*total excluding non-responses.

Q22

Table a

Level of satisfaction with living room size

	count	%tage
very poor	2	1.5%
poor	10	7.3%
satisfactory	45	32.8%
good	49	35.8%
excellent	31	22.6%
total	137	

*total excluding non-responses.

Table c

Level of satisfaction with kitchen size

	count	%tage
very poor	6	5.2%
poor	19	16.5%
satisfactory	38	33.0%
good	34	29.6%
excellent	18	15.7%
total	115	

*total excluding non-responses.

Table d

Level of satisfaction with toilet size

	count	%tage
very poor	4	4.0%
poor	13	13.0%
satisfactory	35	35.0%
good	37	37.0%
excellent	11	11.0%
total	100	

*total excluding non-responses.

Table e

Level of satisfaction with bathroom size

	count	%tage
very poor	3	2.7%
poor	20	17.7%
satisfactory	35	31.0%
good	39	34.5%
excellent	16	14.2%
total	113	

*total excluding non-responses.

Table g

Level of satisfaction with bedroom size

	count	%tage
very poor	3	1.9%
poor	21	13.3%
satisfactory	58	36.7%
good	55	34.8%
excellent	21	13.3%
total	158	

*total excluding non-responses.

Table h

Level of satisfaction with orowa size

	count	%tage
very poor	0	0.0%
poor	2	14.3%
satisfactory	1	7.1%
good	5	35.7%
excellent	6	42.9%
total	14	

*total excluding non-responses.

Table i

Level of satisfaction with storeroom size

	count	%tage
very poor	1	1.6%
poor	16	25.4%
satisfactory	25	39.7%
good	18	28.6%
excellent	3	4.8%
total	63	

*total excluding non-responses.

Some questionnaire results

MATRIX OF LIKED ASPECTS OF DOMESTIC SPACE AND REASONS WHY THESE ASPECTS ARE LIKED.

Reasons for liking domestic space	location	design/style	size of house	services- toilet & bathrms	ownership	no./size of bdrms	structural condition	ventilation	living room	privacy	nothing	
spacious&ample space for storage	5	5	18	1		2			3			34
quiet & serene area	16	3		1						1		21
good design & adequate fixtures	3	2		14	-							19
No rent to pay-owned outright		1			12		1					14
closeness to workplace&facilities	13					1						14
type of unit, selfcontained	2	7		1	1							11
retail opportunities	8											8
good finish/structure		4	1				3					8
secure design	1	2		2								5
very adequate no. of bedrooms		1	2			2						5
cross ventilation		1						3				4
compactness of plan		3	1									4
low density & private			2							1		3
separate private from public	1	2										3
yard/open space for activities	1		1									2
ease of cleaning	1											1
whole house inadequate											1	1
other*	2	2	1	1								6
Total	53	33	26	20	13	5	4	3	3	2	1	163

*other- water, no. of garages

spatial - internal features | spatial -external features | non- spatial features | conflict btw feature and reason in terms of spatiality

MATRIX OF DISLIKED ASPECTS OF DOMESTIC SPACE AND REASONS WHY THESE ASPECTS ARE DISLIKED.

Reasons for disliking domestic space	fixtures & services	maintanance	design/style	geographic location&access	condition of structure	ventilation	kitchen	size of house	no./size of bedrms	nothing	total
poor maintanance of building fabric	3	16	1		9	1	1	1		3	32
inadequate facilities (bathrm/toilet)	15		1	1	1	1	1			4	20
absent/poor elec. & water supply	18				1					5	19
some room sizes ar too small		1	2				6	4	3	2	16
old-fashioned/old age		1	8		2	1	1			1	13
poor ventilation	1	2				7	1				11
absence of facilities (bathrm/toilet)	8				1					1	9
inappropriate location of some spaces	2		3			1	1			1	7
design too european & too few bedrms			2					3	2		7
water-logged area-dirty	1			4						1	5
poor security-no boundary walls		1		3						1	4
little space for gardening			1	3				1			5
poor access to rest of the town	1		1	2							4
not self contained. Shared facilities	1		2								3
too far from workplace				2							2
close proximity of other houses				1						1	1
other*		4	3	1	2	1			1	2	12
Total	50	25	24	17	16	12	11	9	6	22	170

* incl. Poor lighting, poor sound insulation, badly designed door openings, 'dormitory' design, inadequate storage

Table shows total number of times that each option was mentioned.

spatial - internal features | spatial -external features | non- spatial features | conflict btw feature and reason in terms of spatiality

Some questionnaire results

SUMMARY OF CONVENTION OF ACTIVITY LOCATIONS	Main bedroom	Bedroom	living	Store	Corridor	Orowa	Kitchen	Dining	Veranda	Study	Toilet	Bathroom	Garage	total locations		out-of-bound locations
Unused item	6	33	11	36	33	4	0	11	3	2	4	0	4	11		kitchen, bathroom
regular use furniture	62	139	116	0	129	20	111	40	0	29	0	0	0	8		toilet, bathroom, store
Spare furniture	7	46	23	0	14	11	1	0	22	14	0	0	0	8		dining room, toilet, bathroom, store, garage
Portable water	0	0	18	17	22	12	50	0	1	0	6	18	0	8		dining, main bedroom, bedroom, study, garage
Fuel	2	15	6	23	13	6	47	0	0	0	1	0	0	8		dining, bathroom, veranda, study, garage
Food(raw & cooked)	13	55	9	54	6	0	66	7	1	1	0	0	0	8		toilet, bathroom, orowa, study, garage
Fridge.etc	3	1	26	4	5	0	29	32	0	2	0	0	0	8		toilet, bathroom, orowa, veranda, garage
Iron/ironing board	1	9	4	1	24	0	0	4	3	5	0	0	0	8		kitchen, toilet, bathroom, orowa, garage
Bowls & basins	2	20	7	11	33	8	35	0	0	0	4	0	0	8		dining room, bathroom, veranda, study, garage
Print material	28	93	52	2	6	0	0	9	0	22	0	0	0	7		kitchen, toilet, bathroom, orowa, veranda, garage
Crockery	17	64	50	26	5	7	81	26	0	0	0	0	0	7		toilet, bathroom, veranda, study, garage
Clothes, shoes, etc	75	146	19	0	0	3	0	1	0	4	0	6	0	7		kitchen, toilet, corridor, veranda, store, garage
Kit.appliance	1	1	0	18	0	9	42	2	3	0	0	0	0	7		living room, toilet, bathroom, corridor, study, garage
Farming tools	2	13	0	6	4	1	3	0	0	0	0	0	0	7		dining room, toilet, bathroom, veranda, study, garage
Xtra large pots	1	4	0	19	25	1	3	0	0	1	0	0	0	7		living room, dining room, toilet, bathroom, veranda, garage
Retail goods	2	9	4	0	1	0	0	0	0	1	0	0	1	7		dining room, kitchen, toilet, bathroom, orowa, veranda, store
Stove/cooker	4	13	14	0	15	11	63	0	0	0	0	0	0	6		dining room, toilet, bathroom, veranda, store, study, garage
Crate&carton	0	0	0	13	9	0	6	0	5	0	0	3	5	6		living room, dining room, toilet, main bedroom, bedroom, orowa, study
Laundry	0	0	0	5	0	4	0	0	8	0	3	47	0	5		living room, dining room, kitchen, main bedroom, bedroom, corridor, study, garage
Sewing machine	6	8	2	0	0	1	0	5	0	0	0	0	0	5		kitchen, toilet, bathroom, corridor,veranda, store, study, garage
cars & motorbikes	0	0	0	0	3	3	0	0	1	0	0	0	13	5		dining room, kitchen, toilet, bathroom, main bedroom, bedroom, store, study
Animals	0	0	0	0	10	6	3	0	4	0	0	0	1	5		living room, dining room,toilet, bathroom, main bedroom, bedroom, store, study
Electronic gadgets	22	53	107	1	0	0	0	0	0	0	0	0	0	4		dining room, kitchen, toilet, bathroom, corridor, orowa, veranda, study, garage
Fan	27	50	27	0	6	0	0	0	0	0	0	0	0	4		toilet, bathroom, main bedroom, bedroom, orowa, veranda, store, study, garage
Building materials	0	0	0	1	0	1	3	0	0	0	1	0	0	4		living room, dining room, bathroom, main bedroom, bedroom, corridor, veranda, study, garage
Broom/vac. Cleaner	0	0	0	1	12	2	15	0	0	0	0	0	0	4		dining room,toilet, bathroom, main bedroom, bedroom, corridor, veranda, study, garage
Toiletries	15	38	0	0	0	0	0	0	0	0	11	36	0	4		living room, dining room, kitchen, corridor, orowa, veranda, store, study, garage
Phone/computer	0	0	6	0	0	0	0	3	0	2	0	0	0	3		kitchen, toilet, bathroom, main bedroom, bedroom, orowa, veranda, store, garage
Alcoholic/beverages	0	0	2	0	0	0	1	5	0	0	0	0	0	3		toilet, bathroom, main bedroom, bedroom, corridor, orowa, veranda, store, study, garage
Children's items	19	19	6	0	0	0	0	0	0	0	0	0	0	3		living room, dining room, kitchen, toilet, bathroom, corridor, orowa, veranda, store, garage
Valuables	51	57	0	0	0	0	0	0	0	0	2	0	0	3		dining room, kitchen, toilet, bathroom, orowa, veranda, store, study, garage
Portable lighting	0	0	0	2	0	0	0	1	0	0	0	0	0	2		living room, kitchen, toilet, bathroom, main bedroom, bedroom, corridor, orowa, veranda, study, garage
Table covers	0	0	0	2	0	0	0	3	0	0	0	0	0	2		living room, kitchen, toilet, bathroom, main bedroom, bedroom, corridor, orowa, veranda, study, garage
Cleaning agent	0	0	0	0	0	0	0	0	0	0	38	25	0	2		living room, dining room, kitchen, main bedroom, bedroom, corridor, orowa, veranda, store, study, garage
Gift items	1	0	0	3	0	0	0	0	0	0	0	0	0	2		living room, dining room, kitchen, toilet, bathroom, bedroom, corridor, orowa, veranda, study, garage
Worship objects	1	3	0	0	0	0	0	0	0	0	0	0	0	2		living room, dining room, kitchen, toilet, bathroom, corridor, orowa, veranda, store, study, garage
Medication	0	0	0	0	0	0	0	3	0	0	0	0	0	1		living room, kitchen, toilet, bathroom, main bedroom, bedroom, corridor, orowa, veranda, store, study, garage
Utensils	0	0	0	0	0	0	83	0	0	0	0	0	0	1		living room, dining room, toilet, bathroom, main bedroom, bedroom, corridor, orowa, veranda, store, study, garage
Other-plants	0	0	0	0	0	0	0	0	3	0	0	0	0	1		living room, dining room, kitchen, toilet, bathroom, main bedroom, bedroom, corridor, orowa, store, study, garage
total no. of object categories in each space	24	23	20	20	20	18	18	15	11	12	8	6	5			
total no. of times that each space is the most common and 2nd most common location for any object	6	17	7	11	9	2	11	6	4	0	2	3	1			Note: most common location for an activity is highlighted in RED, 2nd most common location is highlighted in BLUE.

Some questionnaire results

SUMMARY OF CONVENTION OF ACTIVITY LOCATIONS	Least Specialised space (multi-functional) ←								→ Most Specialised space (mono-functional)					total locations		out-of-bound locations
	Orowa	Varanda	Corridor	Bedoom	Kitchen	Living room	Dining room	Main bedroom	Study	Bathrm	garage	Store	Toilet			
Family Living	8	37	12	25	1	113	8	11	3	2	1	0	0	11		store, toilet
General storing	4	8	71	57	44	0	2	8	0	2	4	71	1	11	most extensible	living room, study
Eating	9	1	4	38	9	73	80	6	0	0	1	0	0	9		study, bathroom, store, toilet
Reading/study	6	1	4	66	0	63	30	30	25	0	0	0	0	9		batroom, garage, store, toilet
Sleeping/dressing	4	1	0	153	0	26	1	70	11	0	0	4	0	8		corridor, kitchen, bathrm, garage, toilet
Religious	0	1	0	9	0	26	1	7	1	1	0	0	0	7		orowa, corridor, kitchen, garage, store, toilet
Entertainment	4	1	0	24	2	95	3	0	1	0	0	0	0	7	↑	corridor, main bedrm, bathrm, garage, store, toilet
Ironing	2	0	3	6	0	0	11	2	1	0	0	0	0	7		verandah, dining rm, bathrm, garage, store, toilet
Cooking	13	0	29	1	117	3	0	0	0	0	0	2	0	6		verandah, dining rm, main bedrm, study, bathrm, garage, toilet
Food preperation	6	3	1	0	23	1	0	0	0	0	1	0	0	6		bedrm, dining rm, main bedrm, study, bathrm, store, toilet
Retailing	1	9	1	0	0	0	1	0	0	0	1	0	0	5		bedrm, kichen, living rm, main bedrm, study, bathrm, store, toilet
Laundry	2	6	2	0	0	0	0	0	0	31	0	0	0	4		bedrm, kichen, living rm, dining rm, main bedrm, study, garage, store, toilet
Animals	4	0	0	1	1	0	0	0	0	0	0	0	0	3	↓	verandah, corridor, living rm, dining rm, main bedrm, study, bathrm, garage, store, toilet
Toileting	1	0	0	0	0	0	0	0	0	12	0	0	120	3		verandah, corridor, bedrm, kichen, living rm, dining rm, main bedrm, study, garage, store,
Host Events	0	0	1	0	0	4	0	0	0	0	0	0	0	2	least extensible	orowa, veerandah, bedrm, kichen, dining rm, main bedrm, study, bathrm, garage, store, toilet
Watercollect	0	1	0	0	0	0	0	1	0	0	0	0	0	2		orowa, corridor, bedrm, kichen, living rm, dining rm, main bedrm, study, bathrm, garage, store, toilet
Bathing	0	0	0	0	0	0	0	0	0	139	0	0	0	1		All, except the bathroom
Sewing	0	0	0	0	0	0	0	0	0	0	0	1	0	1		all except the store
Sports	0	0	0	0	0	0	0	0	0	0	0	0	0	0		all indoor spaces
Other*	1	0	1	0	1	0	2	1	1	0	15	0	0	7		
total no. of activities in each space	**14**	**11**	**11**	**10**	**8**	**10**	**9**	**9**	**7**	**6**	**5**	**4**	**2**			
total no. of times that each space is the most common and 2nd most common location for any object	2	4	3	8	3	6	2	2	0	3	1	2	1			Note: most common location for an activity is highlighted in RED, 2nd most common location is highlighted in BLUE.

Some of the questionnaire results

SPECIAL OBJECTS - (DL)-corridor (segregated function spaces) genotype	furniture (1)	electrical goods (1)	cooking utensils (1)	fridge/freezer (1)	cooker (1)	food (1)	clothing (1)	religious items (1)	retail goods (1)	books & documents (2)	picture &artwork (2)	iron and elect. Appliance (1)	phone & guitar (1)	cars/bikes (1)	fan & clock (1)	crockery (1)	jewellry (1)	other- portable water (1)	sum
utility	5	2	2	1	0	1	1	0	0									0	12
convenience	0	2	0	0	0	0	0	0	0									0	2
enjoyment & relaxation	1	2	0	0	1	0	0	0	0									0	4
income generating	0	0	0	1	0	0	0	0	1									1	3
information purposes only	0	2	0	0	0	0	0	0	0									0	2
religious reasons	0	0	0	0	0	0	0	1	0									0	1
storage	0	0	0	0	0	0	0	0	0									1	1
expensive & irreplaceable																			
sentimental & aesthetic																			
ventilation and environmental reasons																			
enjoyment & information																			
family unity																			
other- status, family heirloom etc																			
no reason given																			
sum	6	8	2	2	1	1	1	1	1									2	25

SPECIAL OBJECTS - Orowa genotype	clothing (1)	religious items (1)	food (1)	furniture (1)	electrical goods (1)	crockery (1)	cars/bikes (1)	cooking utensils (1)	cooker (1)	retail goods (1)	books & documents (2)	fan & clock (1)	iron and elect. Appliance (1)	phone & guitar (1)	picture &artwork (2)	fridge/freezer (1)	jewellry (1)	other- portable water (1)	sum
utility	6	0	4	2	0	2	0	2	1	0	1	0						2	20
religious reasons	1	4	0	0	0	0	0	0	0	0	0	0						0	5
storage	1	1	0	2	0	0	0	0	0	0	0	0						1	5
income generating	0	0	0	0	0	0	0	0	0	1	0	0						1	2
sentimental & aesthetic	1	0	0	0	1	0	0	0	0	0	0	1						0	3
convenience	0	0	0	0	0	0	2	0	0	0	0	0						0	2
enjoyment & relaxation	0	0	0	0	2	0	0	0	0	0	0	0						0	2
information purposes only	0	0	0	0	1	0	0	0	0	0	0	0						0	1
expensive & irreplaceable	0	0	0	0	0	1	0	0	0	0	0	0						0	1
ventilation and environmental reasons																			
enjoyment & information																			
family unity																			
other- status, family heirloom etc																			
no reason given																			
sum	9	5	4	4	4	3	2	2	1	1	1	1						4	41

SPECIAL OBJECTS - Living-room genotype	furniture (1)	electrical goods (1)	cooking utensils (1)	cars/bikes (1)	cooker (1)	fridge/freezer (1)	food (1)	clothing (1)	religious items (1)	books & documents (2)	picture &artwork (2)	iron and elect. Appliance (1)	phone & guitar (1)	retail goods (1)	fan & clock (1)	crockery (1)	jewellry (1)	other- portable water (1)	sum
utility	9	0	4	0	3	1	2	2	0	0								1	22
convenience	0	1	0	4	1	0	0	0	0	0								0	6
enjoyment & relaxation	1	1	1	0	0	0	1	0	0	0								0	4
expensive & irreplaceable	0	3	0	0	0	0	0	0	0	1								0	4
religious reasons	0	0	0	0	0	1	0	0	1	0								0	2
ventilation and environmental reasons	0	0	0	0	0	1	0	0	0	0								0	1
information purposes only	0	1	0	0	0	0	0	0	0	0								0	1
sentimental & aesthetic																			
storage																			
enjoyment & information																			
income generating																			
family unity																			
other- status, family heirloom etc																			
no reason given																			
sum	10	6	5	4	4	3	3	2	1	1								1	40

SPECIAL OBJECTS - (DL)-corridor (segregated kitchen) genotype	electrical goods (1)	furniture (1)	fan & clock (1)	food (1)	cooking utensils (1)	fridge/freezer (1)	books & documents (2)	cooker (1)	clothing (1)	religious items (1)	cars/bikes (1)	crockery (1)	retail goods (1)	picture &artwork (2)	iron and elect. Appliance (1)	jewellry (1)	phone & guitar (1)	other- portable water (1)	sum
utility	4	9	1	9	8	3	3	4	4	0	0	2	0	0				7	54
information purposes only	18	1	0	0	0	0	2	0	0	0	0	0	0	0				0	21
enjoyment & information	0	0	8	0	0	0	0	0	0	0	0	0	0	0				0	8
enjoyment & relaxation	4	4	0	0	0	0	0	0	0	0	0	0	0	0				0	8
convenience	3	0	0	0	0	0	0	1	0	0	3	0	0	0				0	7
ventilation and environmental reasons	0	0	0	1	0	5	0	0	0	0	0	0	0	0				0	6
religious objects	0	1	0	0	0	0	0	0	0	2	0	0	0	0				1	4
sentimental & aesthetic	0	0	0	0	0	0	2	0	1	0	0	0	0	1				0	4
expensive & irreplaceable	2	1	1	0	0	0	0	0	0	0	0	0	0	0				0	4
storage	0	0	0	0	0	0	0	0	0	1	0	0	0	0				1	2
income generating	0	0	0	0	0	0	0	0	0	0	0	0	2	0				1	3
family unity	3	0	0	0	0	0	0	0	0	0	0	0	0	0				0	3
other- status, family heirloom etc	2	0	0	0	0	0	0	0	0	0	0	0	0	0				0	2
no reason given																			
sum	36	16	10	10	8	8	7	5	5	3	3	2	2	1				10	126

Some of the questionnaire results

SPECIAL OBJECTS - (DL)-corridor (integrated kitchen) genotype	electrical goods (1)	furniture (1)	clothing (1)	food (1)	fridge/freezer (1)	religious items (1)	books & documents (2)	fan & clock (1)	cooking utensils (1)	cooker (1)	retail goods (1)	cars/bikes (1)	iron and elect. Appliance (1)	phone & guitar (1)	picture &artwork (2)	crockery (1)	jewellry (1)	other- portable water (1)	sum
utility	0	6	4	5	0	1	1	1	1	1	0							1	21
enjoyment & relaxation	3	0	1	0	0	0	0	0	0	0	0							0	4
convenience	0	0	0	0	1	0	0	1	0	0	0							0	2
information purposes only	2	0	0	0	0	0	1	0	0	0	0							0	3
religious reasons	0	0	0	0	0	2	0	0	0	0	0							0	2
ventilation and environmental reasons	0	0	0	0	2	0	0	0	0	0	0							0	2
income generating	0	0	0	0	0	0	0	0	0	0	1							1	2
sentimental & aesthetic	0	0	1	0	0	0	0	0	0	0	0							0	1
storage																			
expensive & irreplaceable																			
enjoyment & information																			
family unity																			
other- status, family heirloom etc	1	0	0	0	0	0	0	0	0	0	0							0	1
no reason given																			
sum	6	6	6	5	3	3	2	2	1	1	1							2	38

SPECIAL OBJECTS - (SL)-corridor (integrated kitchen) genotype	electrical goods (1)	furniture (1)	fridge/freezer (1)	cars/bikes (1)	cooking utensils (1)	clothing (1)	food (1)	cooker (1)	religious items (1)	books & documents (2)	picture &artwork (2)	iron and elect. Appliance (1)	phone & guitar (1)	retail goods (1)	fan & clock (1)	crockery (1)	jewellry (1)	other- portable water (1)	sum
utility	2	10	1	0	5	1	5	5	0	2	0	0	0	0	0			1	32
enjoyment & relaxation	6	1	6	0	1	0	0	0	0	0	0	0	1	0	0			0	15
convenience	1	1	1	7	1	1	0	0	0	0	0	1	0	0	0			0	13
information purposes only	9	0	0	0	0	0	0		0	0	0	0	1	0	0			0	10
sentimental & aesthetic	0	1	0	0	0	3	0	0	0	0	1	1	0	0	0			0	6
storage	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0			5	6
religious reasons	0	0	0	1	0	0	0	0	4	0	0	0	0	0	0			0	5
expensive & irreplaceable	2	1	0	1	0	0	0	0	0	1	0	0	0	0	0			0	5
ventilation and environmental reasons	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0			0	3
enjoyment & information	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1			0	2
income generating	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0			0	1
family unity	2	0	0	0	0	0	0	0	0		0	0		0	0			0	2
other- status, family heirloom etc	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	3
no reason given																			
sum	25	14	11	9	7	6	5	5	4	3	2	2	2	1	1			6	103

Note: self-related reasons are highlighted in blue.

at least 5% of responses

less than 1% of total responses

NOT

no. 1:- refers to Household Chores

no. 2:- refers to Extended Chores

no. 3:- refers to Passive Leisure

no. 4:- refers to Interactive Leisure

no. 5:- refers to Private Needs

no. 6:- refers to Communal Needs

Some of the questionnaire results

IMPORTANT ACTIVITIES - (DL)-corridor (segregated function spaces) genotype	entertain/relax (3)	cooking (1)	eating (6)	sleeping (5)	religious activity(5 & 6)	study/reading (3)	trading (2)	host parties/meetings (4)	housework (1)	family reunions (4)	farming (2)	other-play guitar etc (3)	no response	sum
daily, involves the family	3	4	2	2	0	1	0					3		15
to uphold unity in the extended family	1	0	1	0	1	0	0					0		3
financial benefits	0	0	0	0	0	0	1					0		1
for religious purposes														
because it is time consuming														
to maintain our heritage														
hygiene														
it is pleasurable														
it is our social responsibility														
educative														
other	1	0	0	0	0	0	0					0		1
no response														
	5	4	3	2	1	1	1					3		20

IMPORTANT ACTIVITIES: - Orowa genotype	religious activity(5 & 6)	eating (6)	host parties/meetings (4)	housework (1)	entertain/relax (3)	cooking (1)	sleeping (5)	study/reading (3)	trading (2)	family reunions (4)	farming (2)	other-play guitar etc (3)	no response	sum
to uphold unity in the extended family	2	2	3	0	1	0	0	0	0	0		1		9
hygiene	0	0	0	4	0	0	0	0	0	0		2		6
it is our social responsibility	3	0	1	0	0	0	0	0	0	1		1		6
daily, involves the family	0	2	0	0	0	2	2	0	0	0		0		6
for religious purposes	5	0	0	0	0	0	0	0	0	0		0		5
it is pleasurable	0	1	0	0	1	0	0	0	0	0		0		2
financial benefits	0	0	0	0	0	0	0	0	1	0		0		1
to maintain our heritage	0	0	0	0	0	0	0	1	0	0		0		1
because it is time consuming														
educative														
other														
no response														
	10	5	4	4	2	2	2	1	1	1		4		36

SPECIAL OBJECTS - Living-room genotype	eating (6)	housework (1)	religious activity(5 & 6)	cooking (1)	sleeping (5)	entertain/relax (3)	trading (2)	host parties/meetings (4)	family reunions (4)	study/reading (3)	farming (2)	other-play guitar etc (3)	no response	sum
daily, involves the family	4	1	0	6	4	0	0	1				2		18
for religious purposes	0	1	6	0	0	0	0	0				0		7
to uphold unity in the extended family	4	0	0	0	0	2	0	0				0		6
hygiene	0	5	1	0	0	0	0	0				0		6
it is pleasurable	0	0	0	0	1	0	0	0				0		1
financial benefits	0	0	0	0	0	0	1	0				0		1
it is our social responsibility														0
to maintain our heritage														0
because it is time consuming														0
educative														0
other														0
no response														
	8	7	7	6	5	2	1	1				2		39

SPECIAL OBJECTS - (DL)-corridor (segregated kitchen) genotype	eating (6)	entertain/relax (3)	religious activity(5 & 6)	sleeping (5)	housework (1)	cooking (1)	study/reading (3)	host parties/meetings (4)	family reunions (4)	trading (2)	farming (2)	other-play guitar etc (3)	no response	sum
daily, involves the family	12	4	2	8	1	6	0	0	0	0		1		34
to uphold unity in the extended family	4	9	6	0	1	0	0	1	1	0		0		22
it is pleasurable	2	8	0	0	0	0	0	2	0	0		0		12
for religious purposes	0	0	11	0	0	0	0	0	0	0		0		11
hygiene	0	0	0	1	6	0	0	0	0	0		1		8
to maintain our heritage	0	0	0	0	0	0	6	1	0	0		0		7
it is our social responsibility	0	0	0	0	0	1	0	0	2	0		0		3
financial benefits	0	0	0	0	0	0	0	0	0	1		0		1
because it is time consuming	0	0	0	0	0	0	0	0	0	0		0		0
educative														
other														
no response														
	18	21	19	9	8	7	6	4	3	1		2		98

Some of the questionnaire results

SPECIAL OBJECTS - (DL)-corridor (integrated kitchen) genotype	eating (6)	sleeping (5)	religious activity(5 & 6)	cooking (1)	entertain/relax (3)	host parties/meetings (4)	study / reading (3)	housework (1)	family reunions (4)	trading (2)	farming (2)	other-play guitar etc (3)	no response	sum
daily, involves the family	6	4	1	4	0	0	0					0		15
to uphold unity in the extended family	2	1	1	0	2	2	0					0		8
it is pleasurable	0	0	0	0	0	1	0					1		2
for religious purposes	0	0	4	0	0	0	0					0		4
because it is time consuming	1	1	0	1	0	0	0					0		3
to maintain our heritage	0	0	0	0	0	0	1					0		1
hygiene														
financial benefits														
it is our social responsibility														
educative														
other	1	1	0	0	1	0	0					0		3
no response														
	10	7	6	5	3	3	1					1		36

SPECIAL OBJECTS - (SL)-corridor (integrated kitchen) genotype	eating (6)	entertain/relax (3)	religious activity(5 & 6)	sleeping (5)	housework (1)	cooking (1)	host parties/meetings (4)	study / reading (3)	trading (2)	family reunions (4)	farming (2)	other-play guitar etc (3)	no response	sum
daily, involves the family	20	9	2	15	11	13	0	3	0	0	0	2		75
to uphold unity in the extended family	6	1	2	1	0	0	5	0	0	1	1	1		18
for religious purposes	0	0	12	0	0	0	0	0	0	0	0	0		12
it is pleasurable	0	7	0	0	0	0	0	0	0	0	0	0		7
hygiene	0	0	0	0	5	0	0	0	0	0	0	0		5
it is our social responsibility	0	0	0	0	0	0	0	1	0	1	0	0		2
to maintain our heritage	0	1	0	0	0	0	0	0	1	0	0	0		2
financial benefits	0	0	0	0	0	0	0	0	1	0	0	0		1
because it is time consuming	0	0	0	0	0	0	0	0	0	0	1	0		1
educative	0	0	0	0	0	0	1	0	0	0	0	0		1
other	0	0	1	0	0	0	1	0	0	0	0	0		2
no response														
	26	18	17	16	16	13	7	4	2	2	2	3		126

Note: self-related reasons are highlighted in blue.

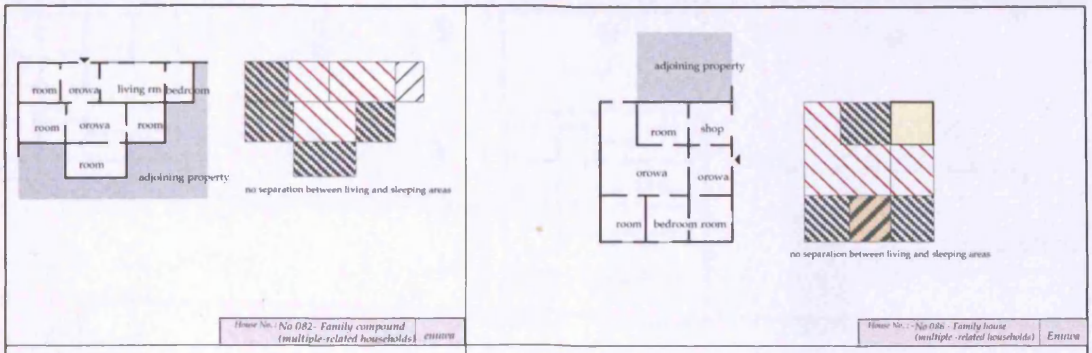
NOTE: -

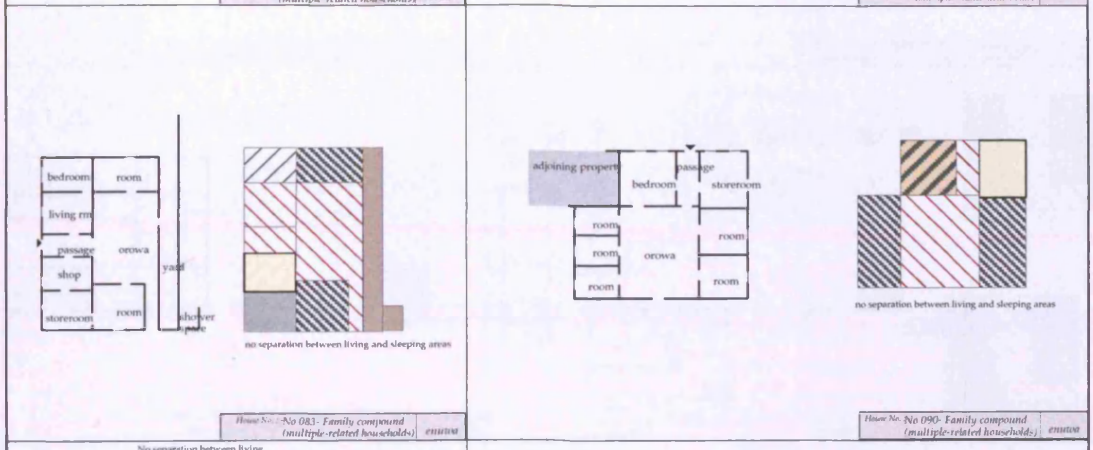
no. 1:- refers to Household Cho
no. 2:- refers to Extended Chor
no. 3:- refers to Passive Leisure
no. 4:- refers to Interactive Leis
no. 5:- refers to Private Needs
no. 6:- refers to Communal Nee

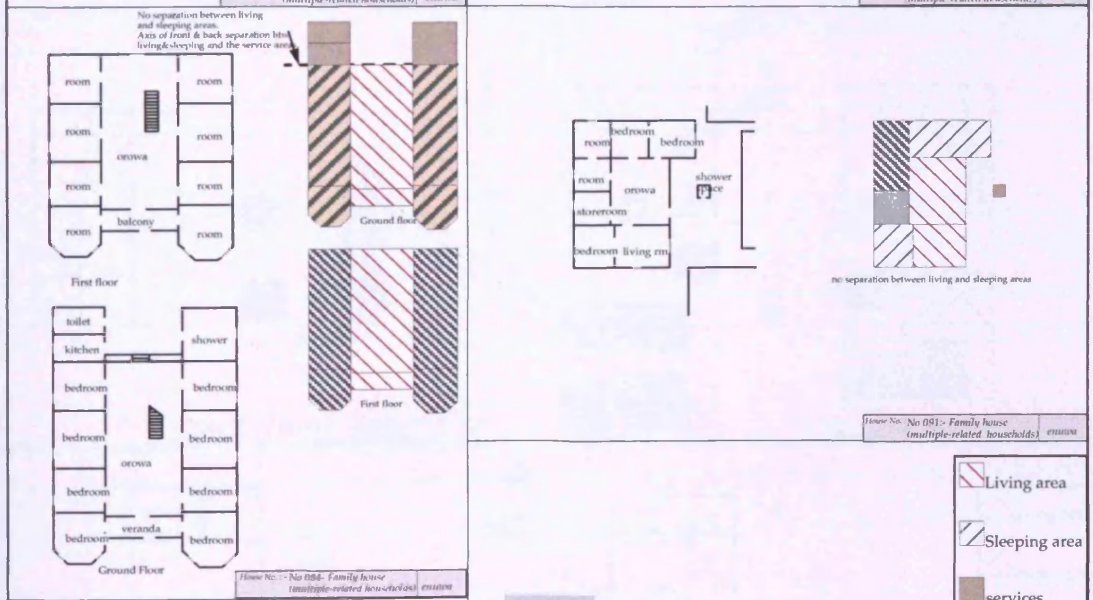
at least 5% of responses
less than 1% of total responses

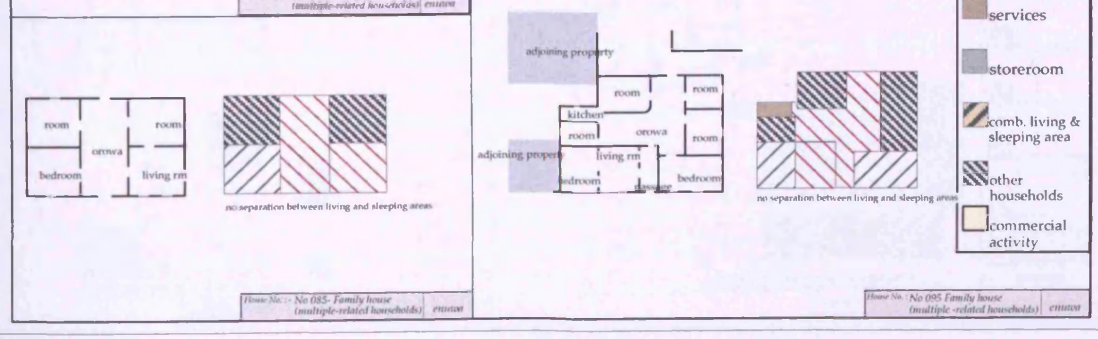
APPENDIX C: - DRAWINGS

OROWA GEOMETRIC TYPE

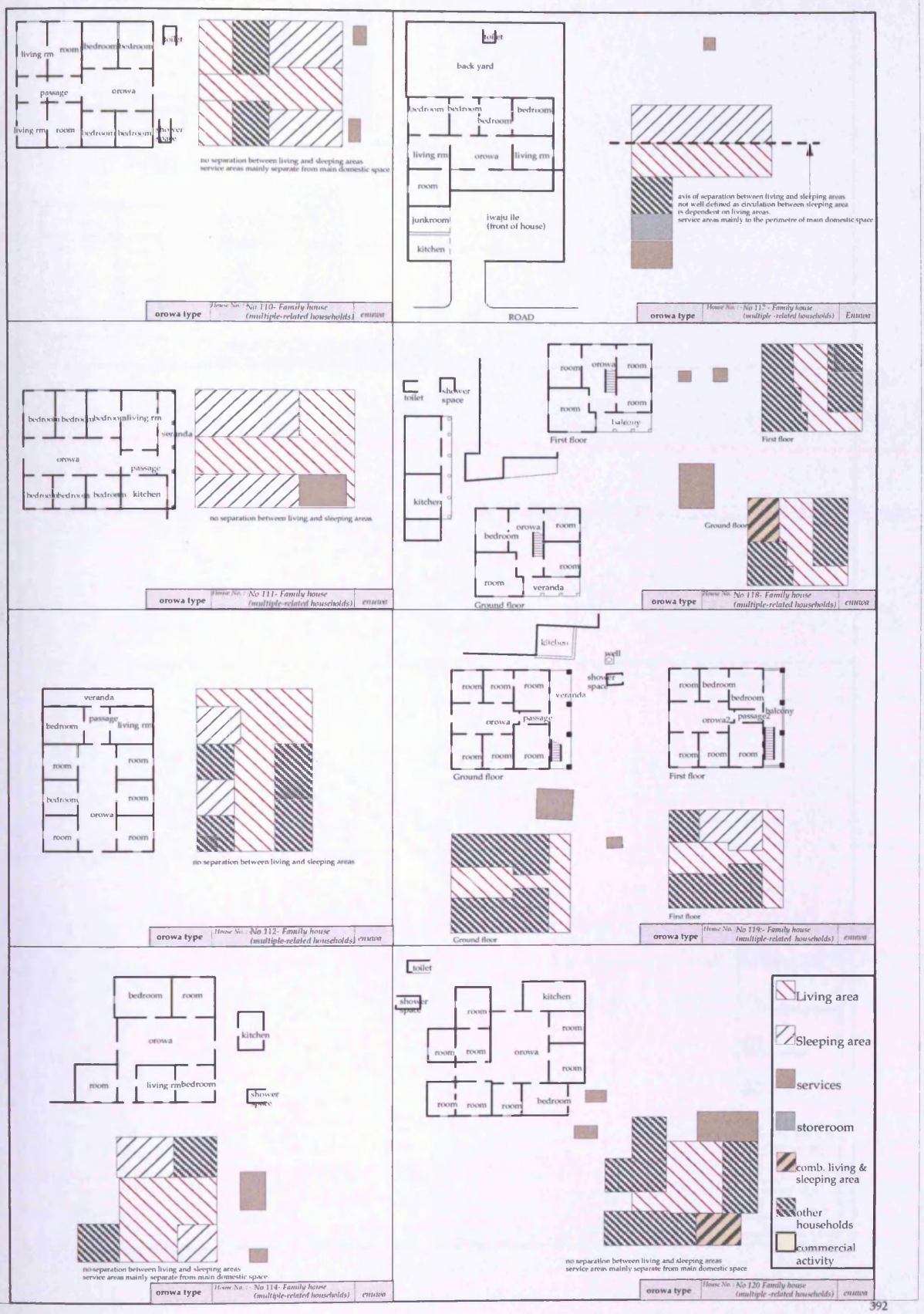




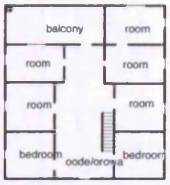




OROWA GEOMETRIC TYPE



Ground floor



First floor

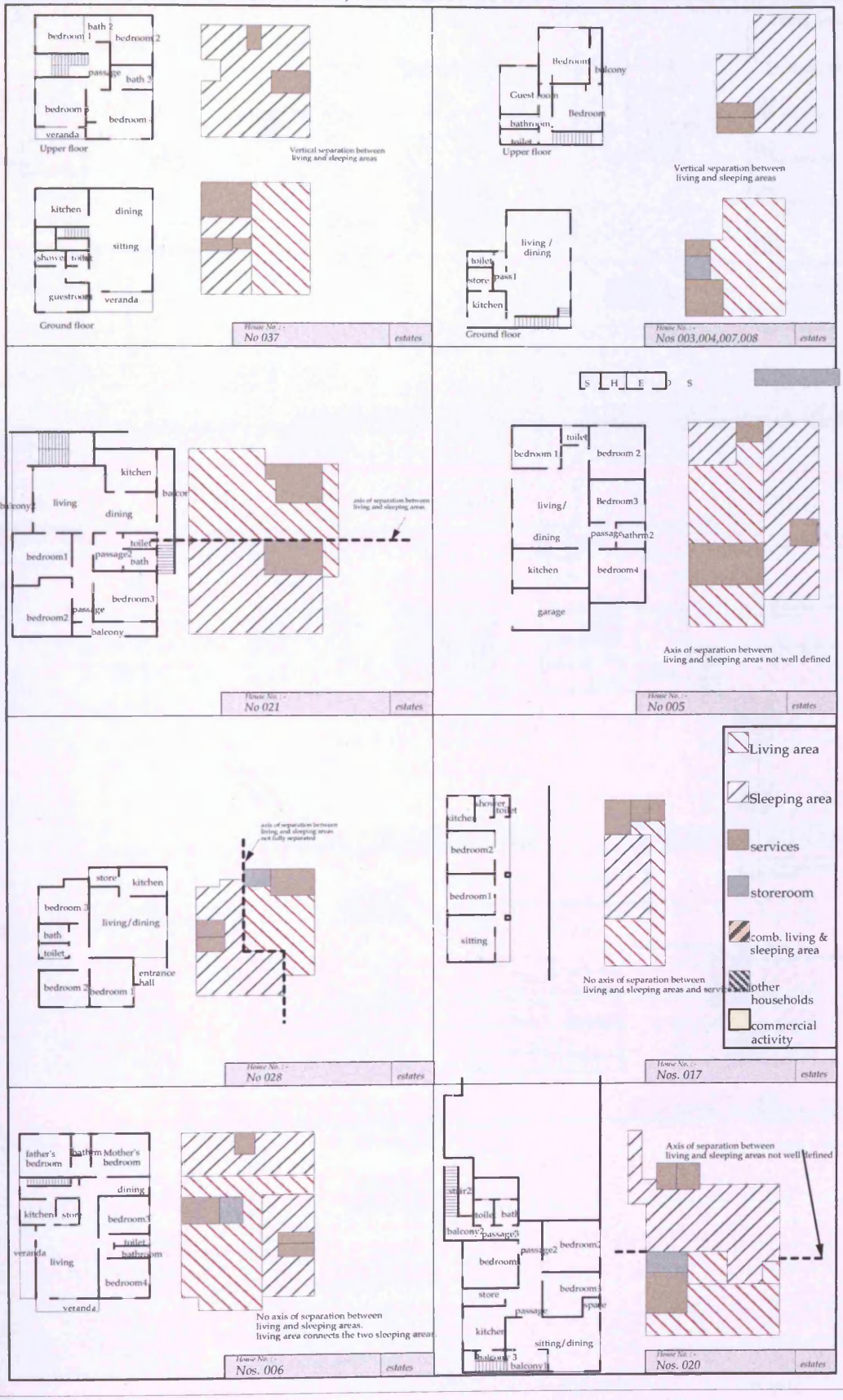
no separation between living and sleeping areas

Ground floor

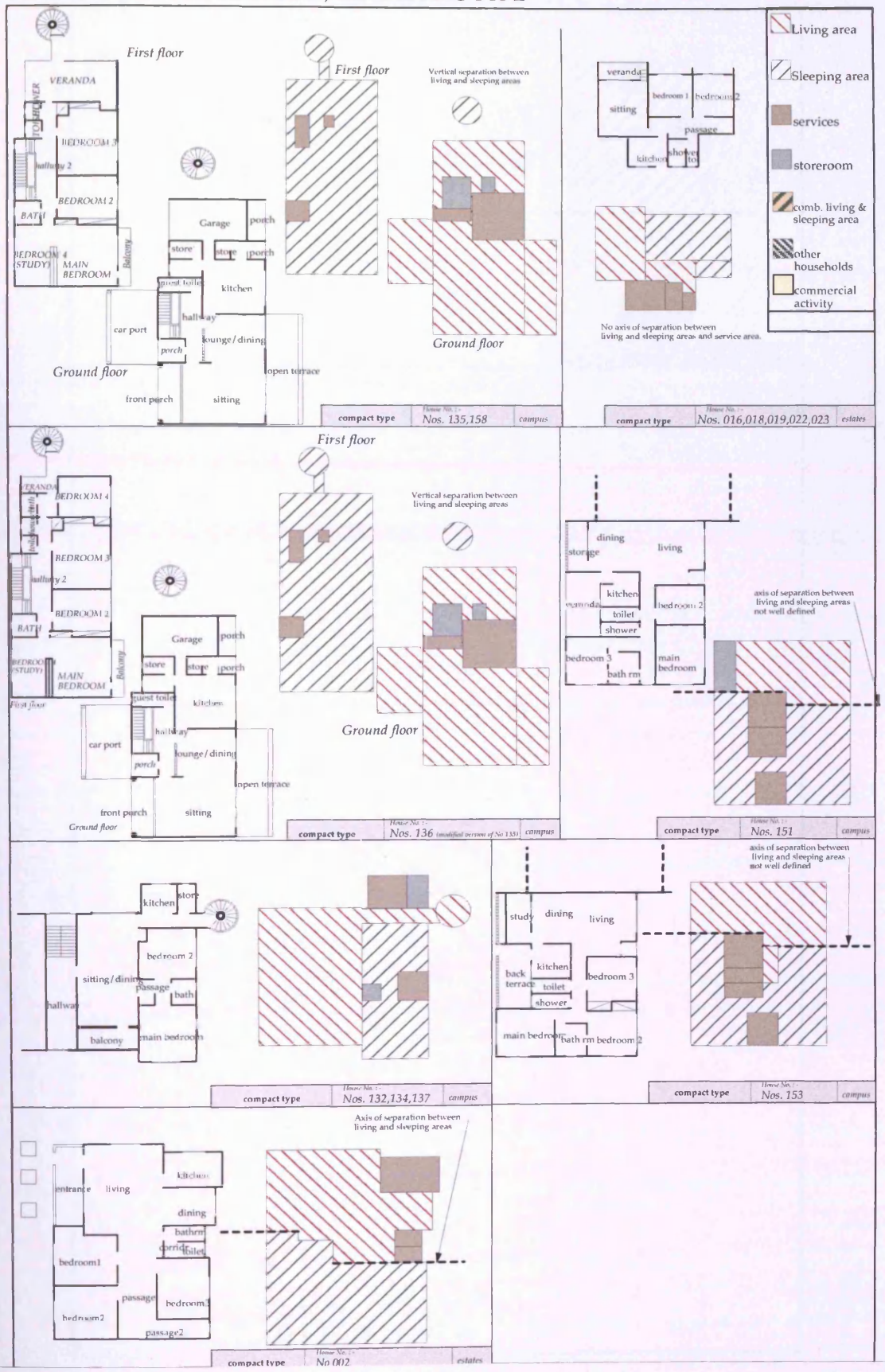
First floor

House No. : - *No 058- Tenement house (multiple households)* akarabata

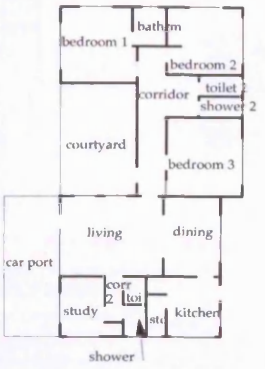
COMPACT (NON-COURTYARD) GEOMETRIC TYPE

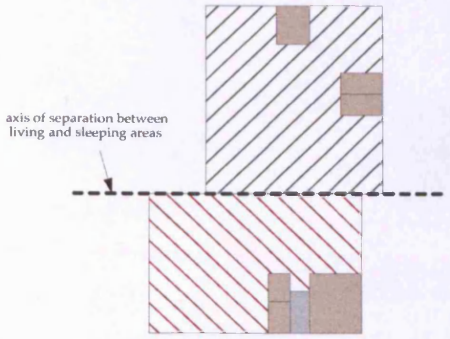


COMPACT (NON-COURTYARD) GEOMETRIC TYPE



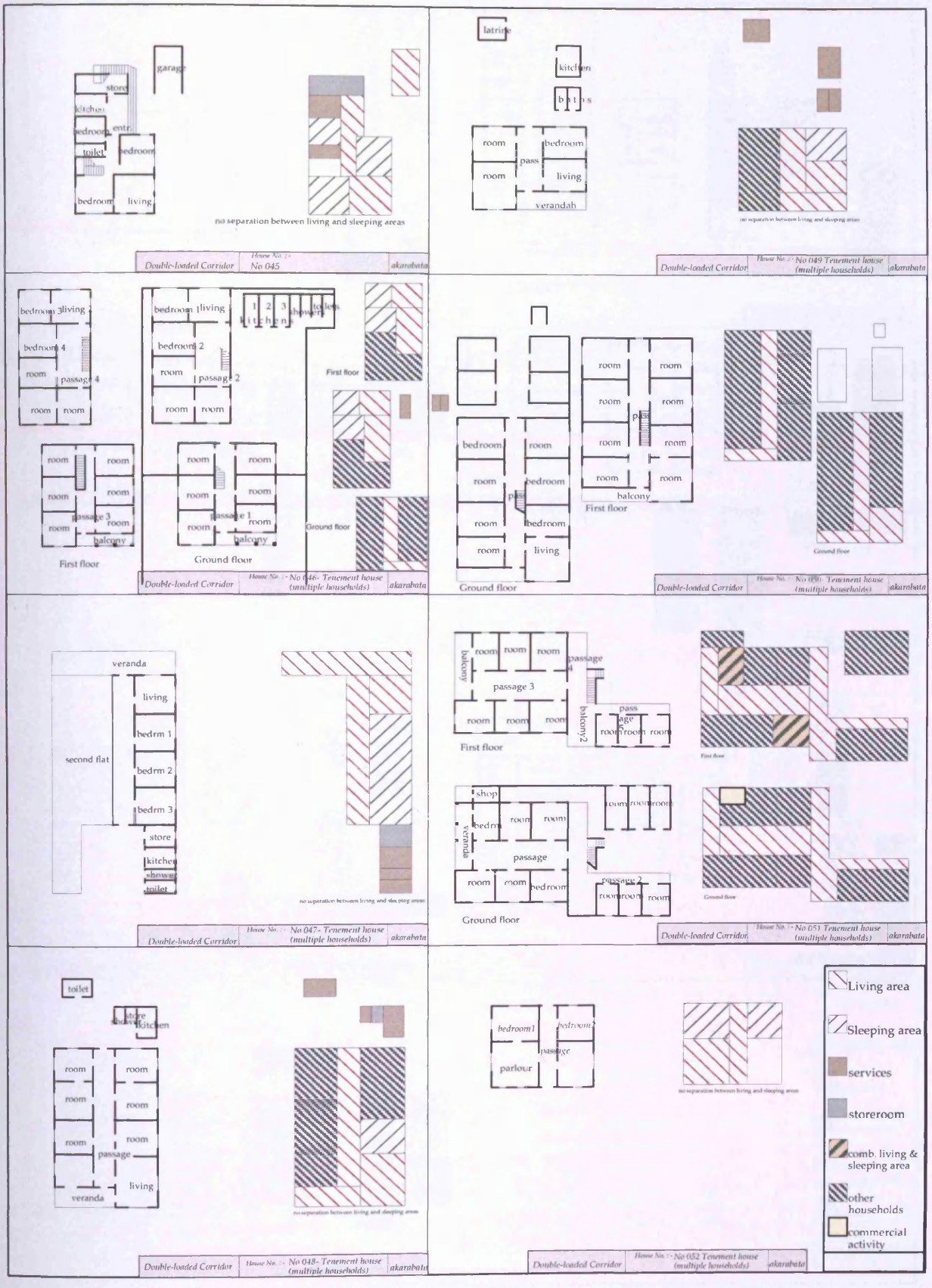
COMPACT(COURTYARD) GEOMETRIC TYPE



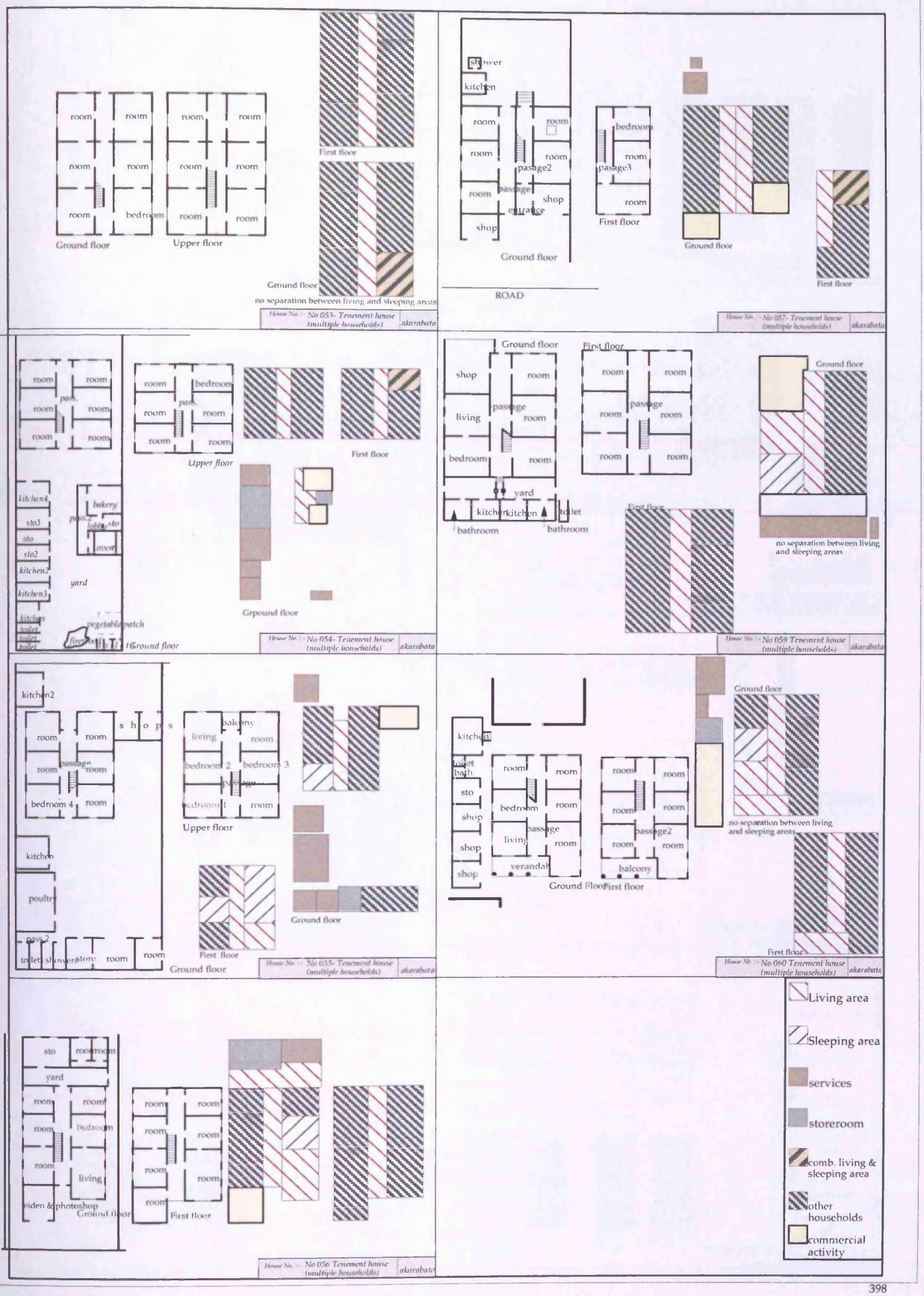


compact (courtyard)	House No. Nos. 152	campus

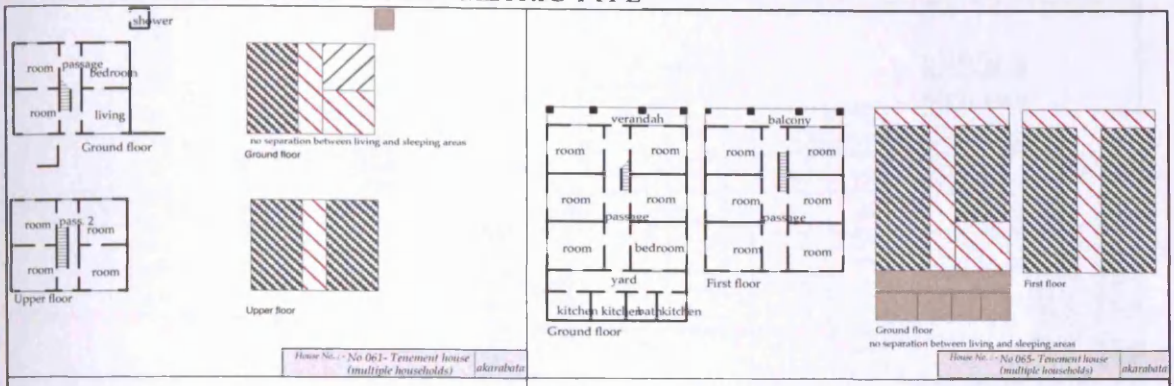
DOUBLE-LOADED CORRIDOR GEOMETRIC TYPE

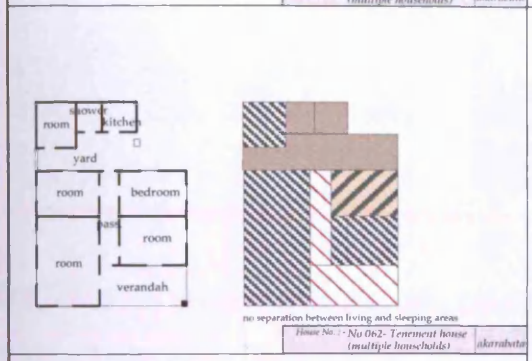


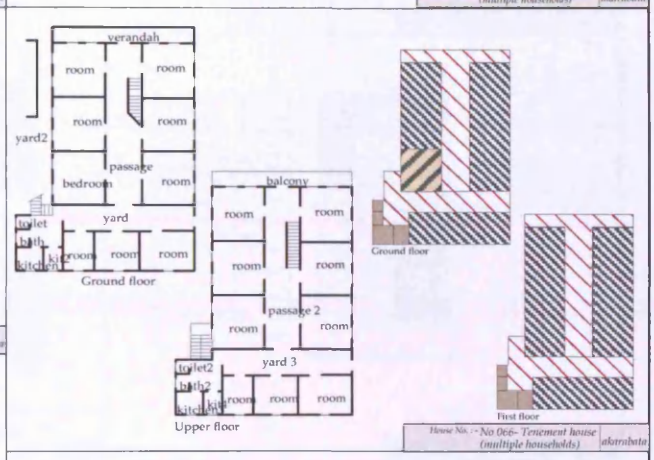
DOUBLE-LOADED CORRIDOR GEOMETRIC TYPE

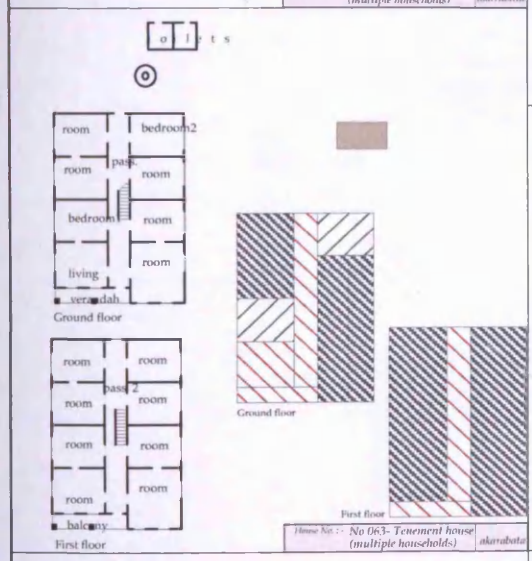


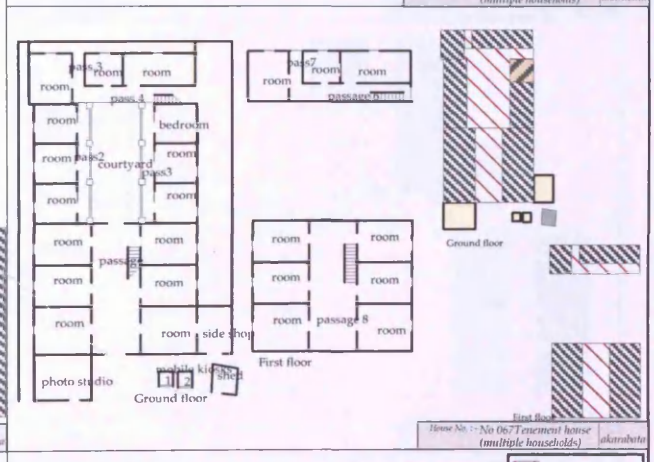
DOUBLE-LOADED CORRIDOR GEOMETRIC TYPE

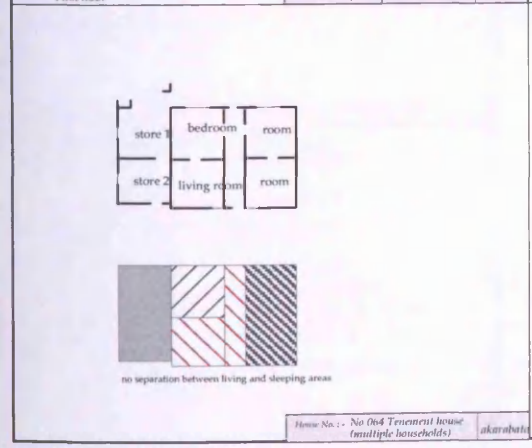


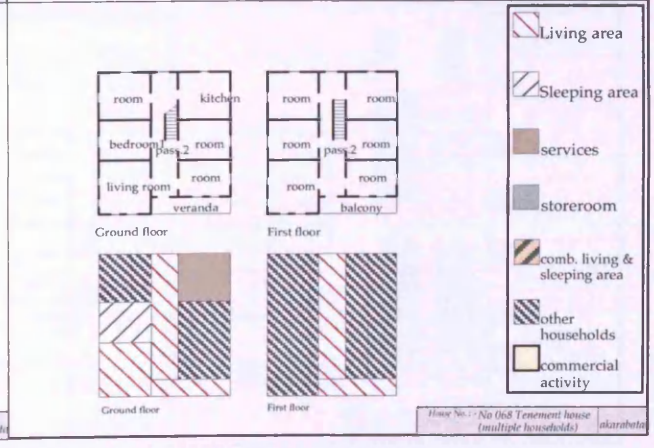




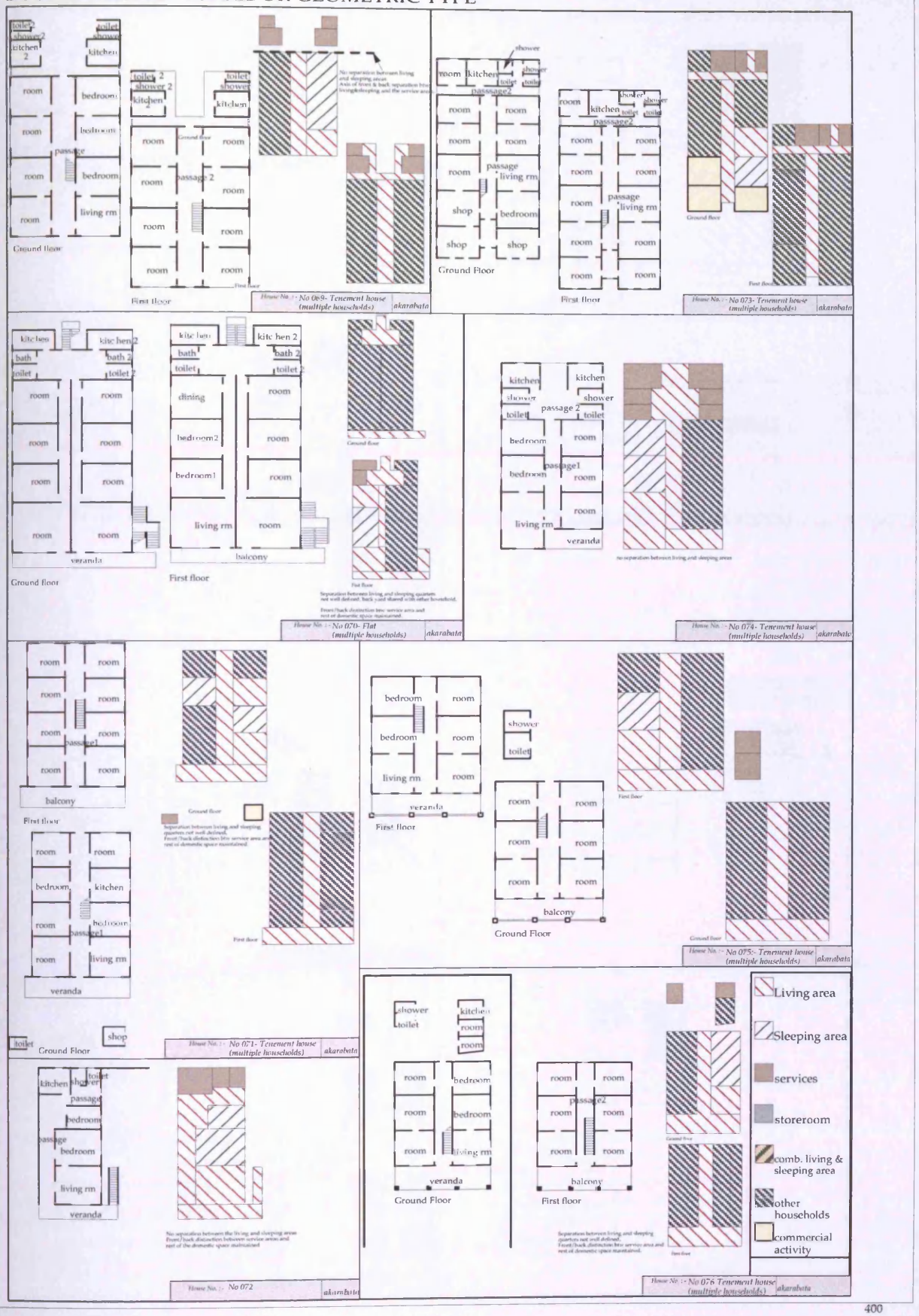








DOUBLE-LOADED CORRIDOR GEOMETRIC TYPE



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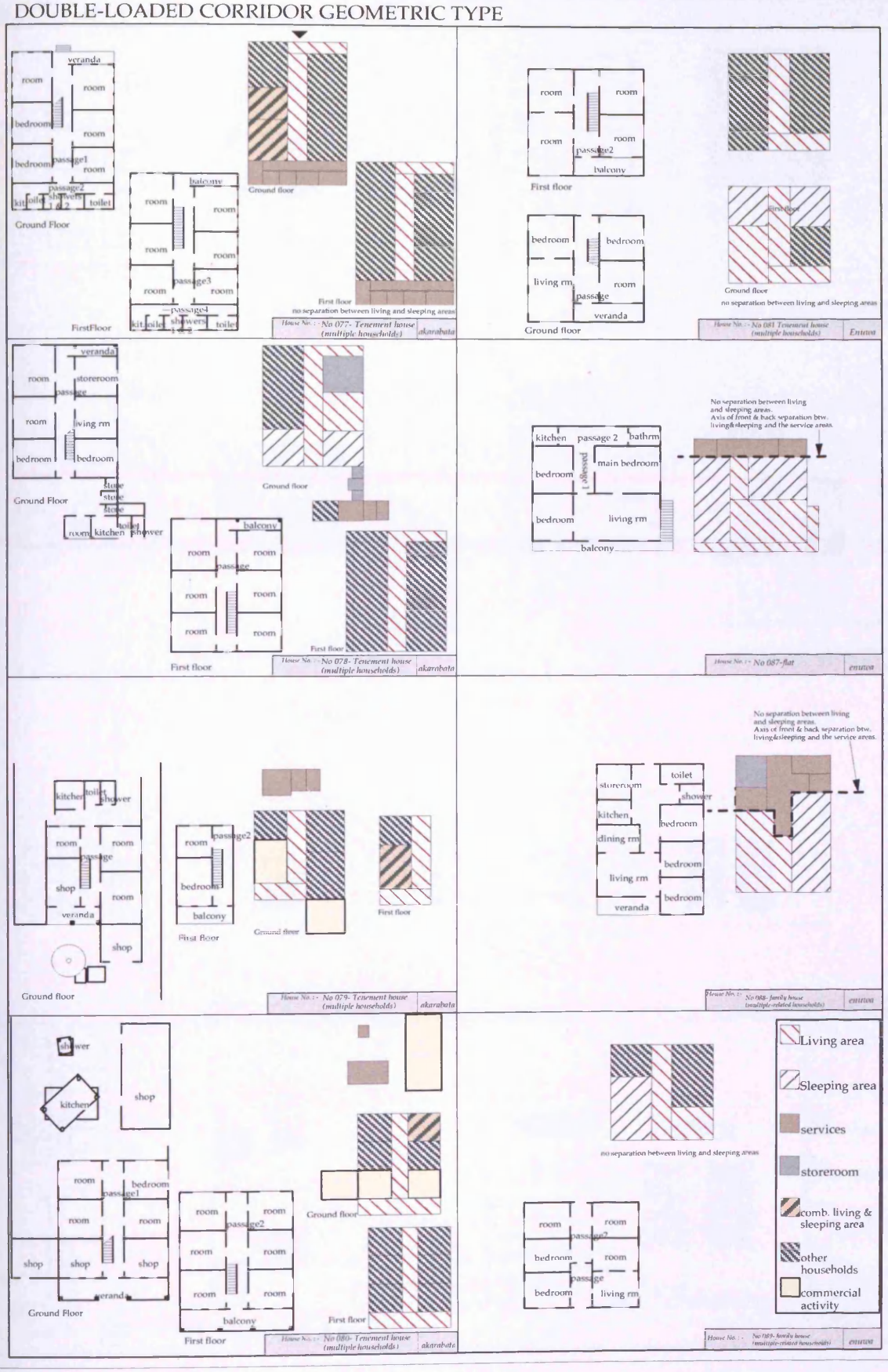

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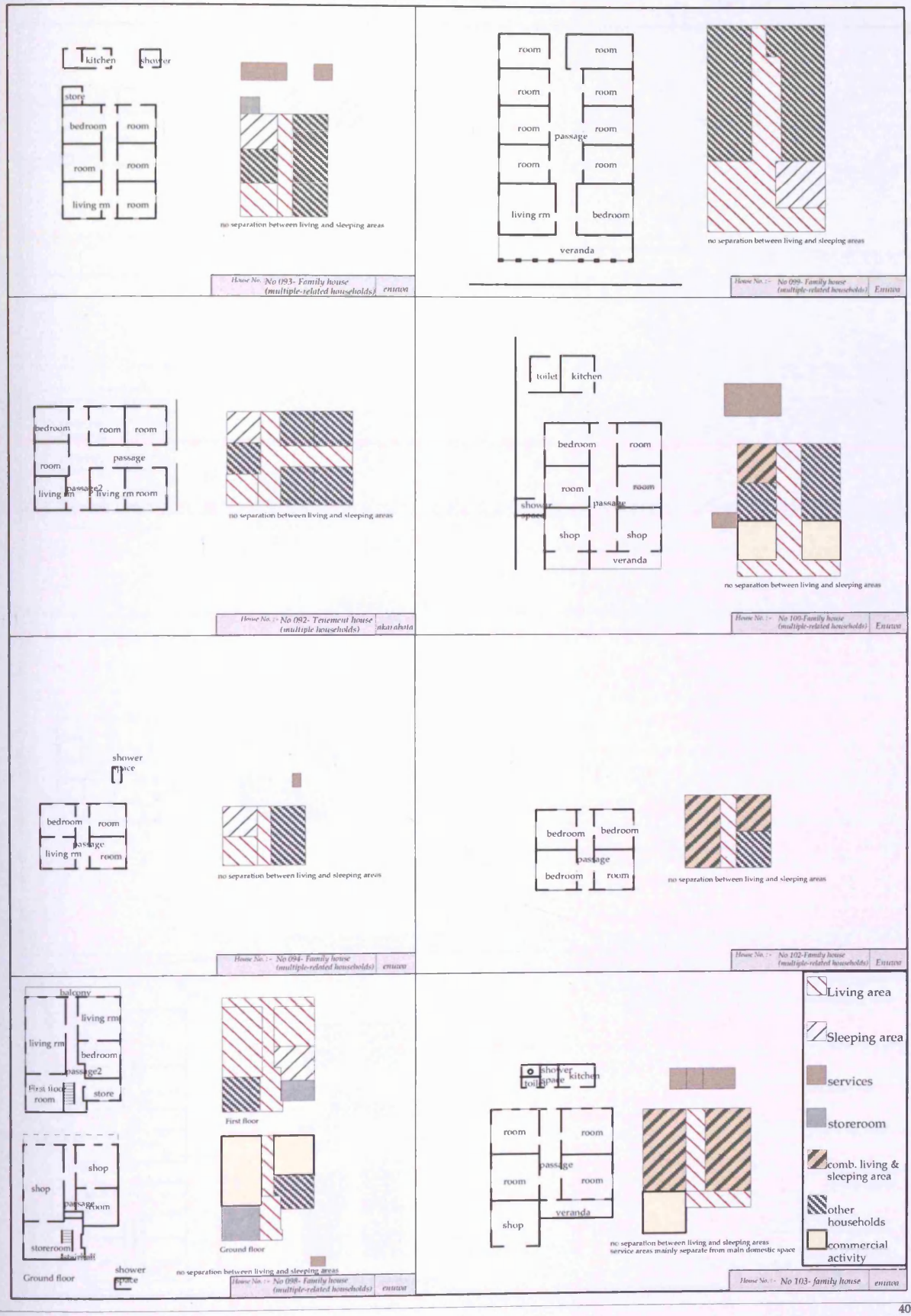

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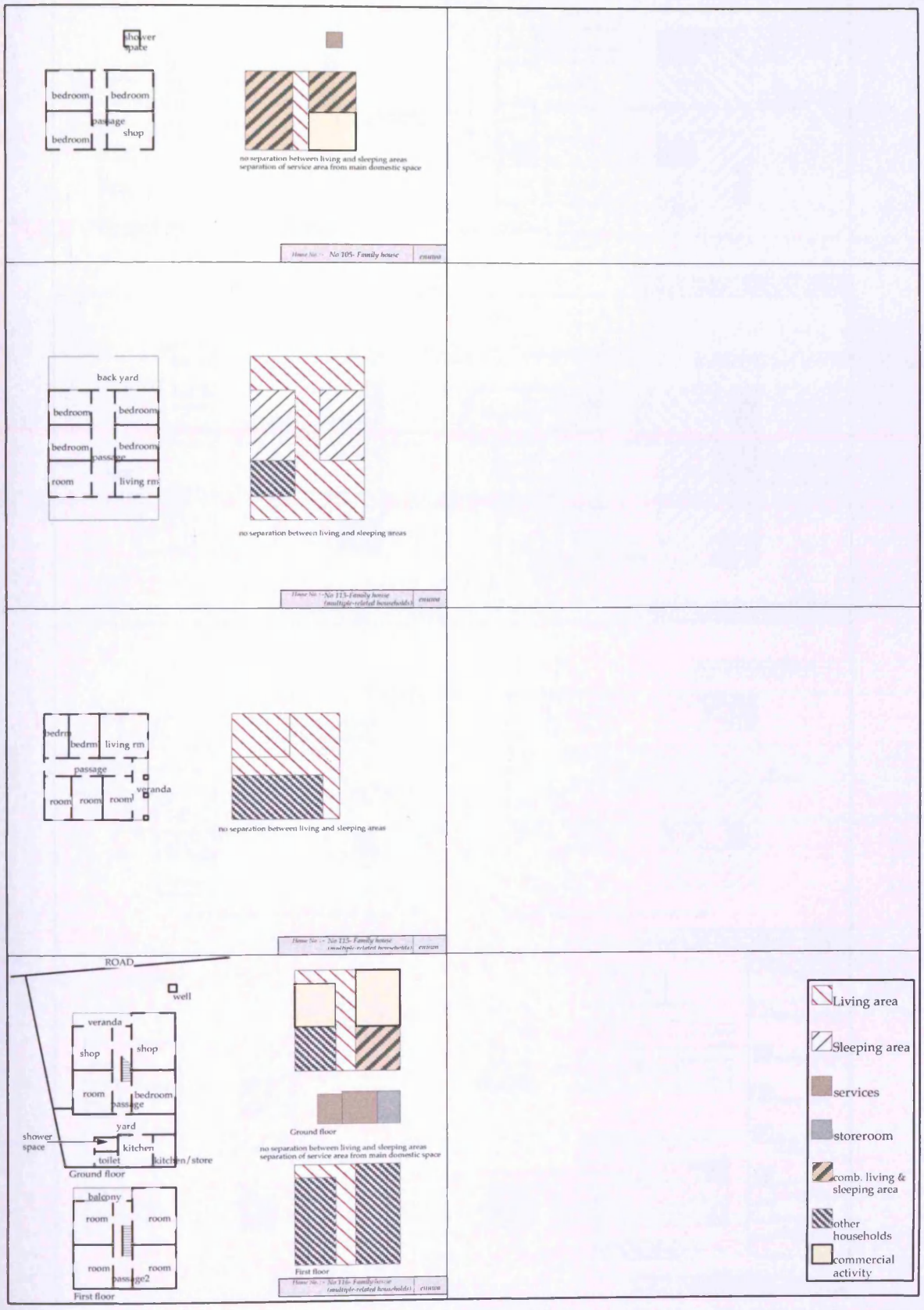
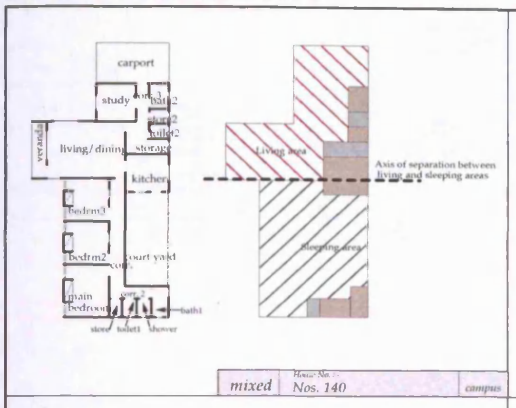
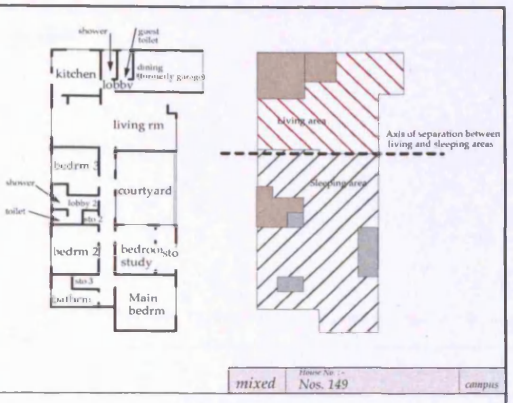


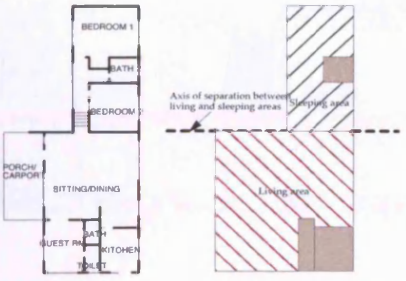
MIXED GEOMETRIC TYPE



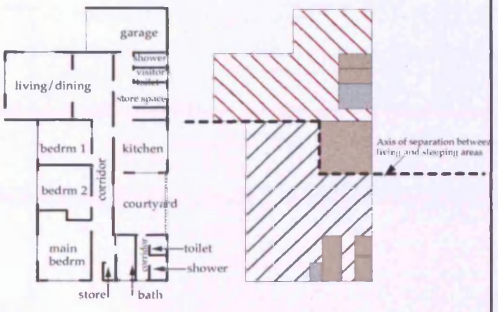
mixed | House No. Nos. 140 | campus



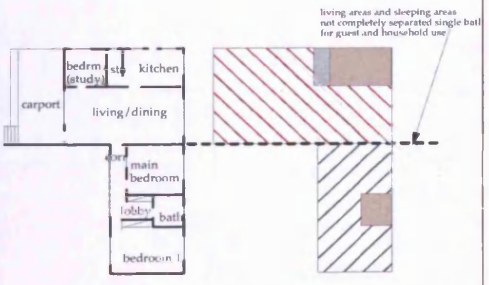
mixed | House No. Nos. 149 | campus



mixed | House No. No 139 | campus

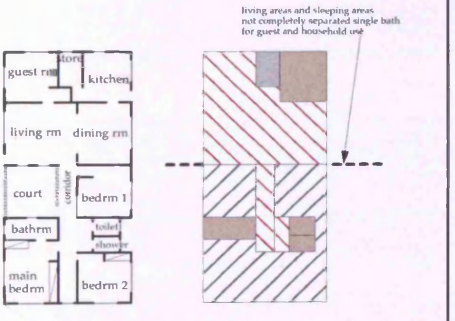


mixed | House No. Nos. 154 | campus



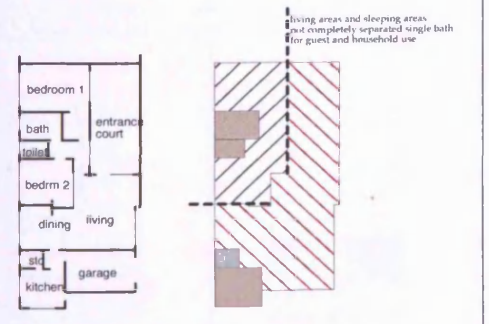
NOTE: THIS PLAN IS ALSO SHOWN ON P 157

mixed | House No. Nos. 146 | campus

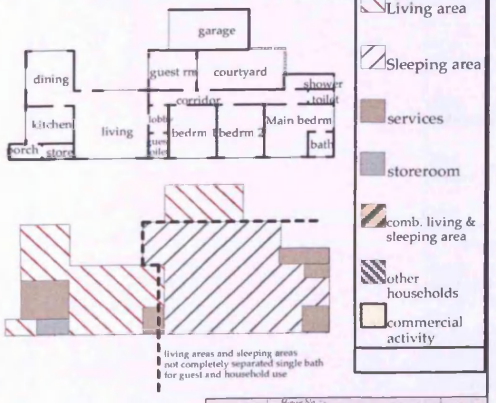


NOTE: THIS PLAN IS ALSO SHOWN ON P 157

mixed | House No. Nos. 155 | campus

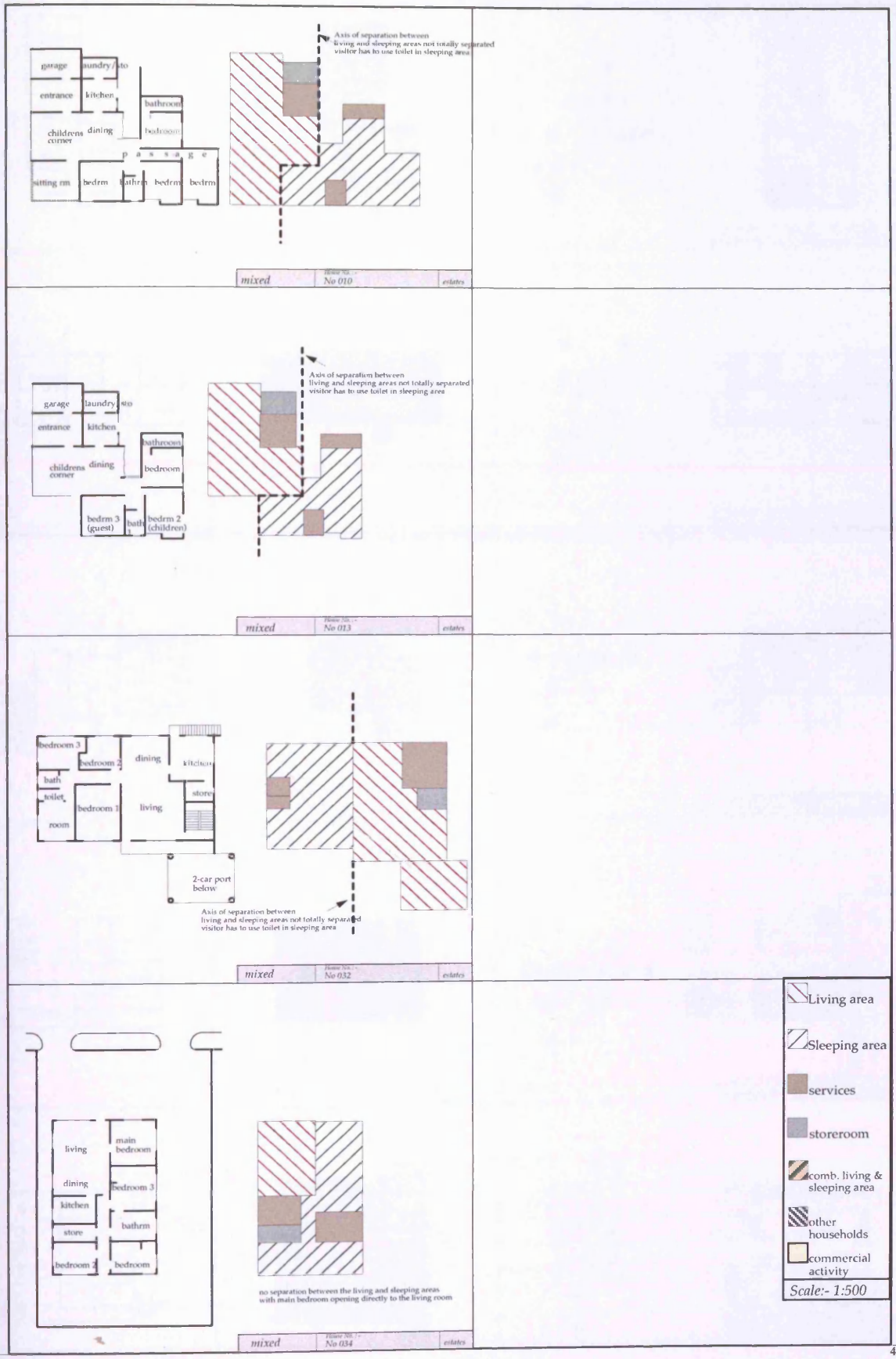


mixed | House No. Nos. 147 | campus

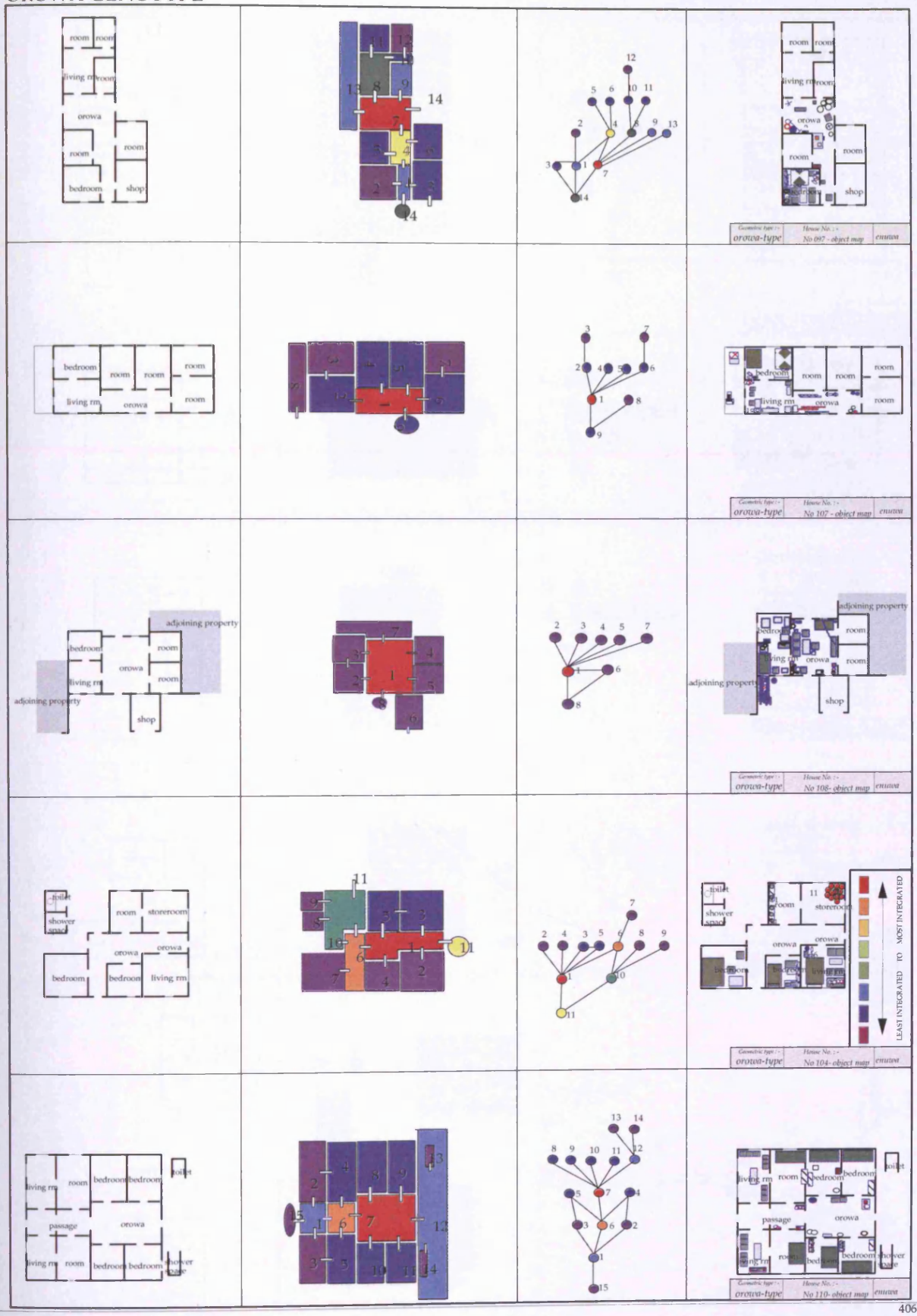


mixed | House No. Nos. 156 | campus

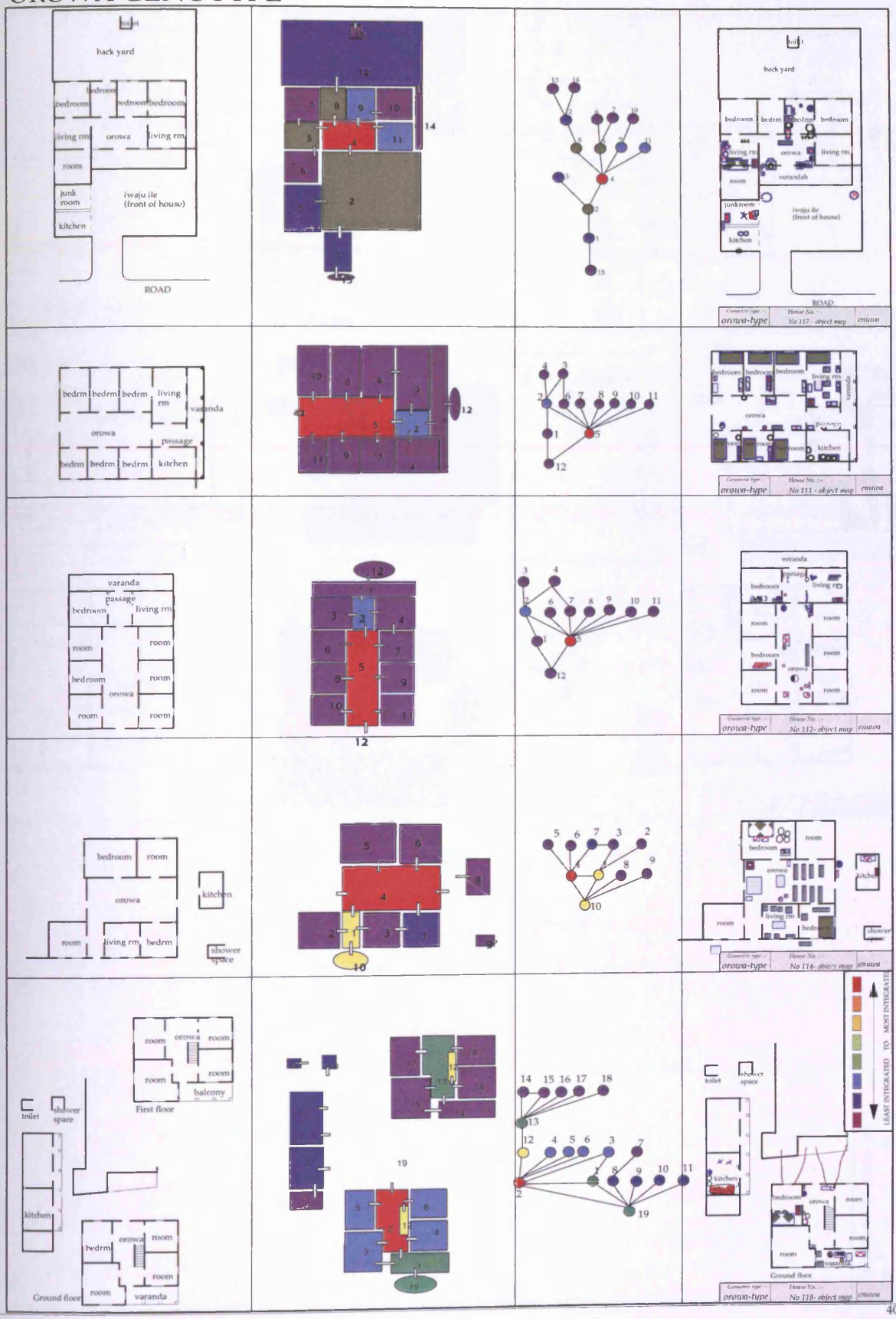
MIXED GEOMETRIC TYPE



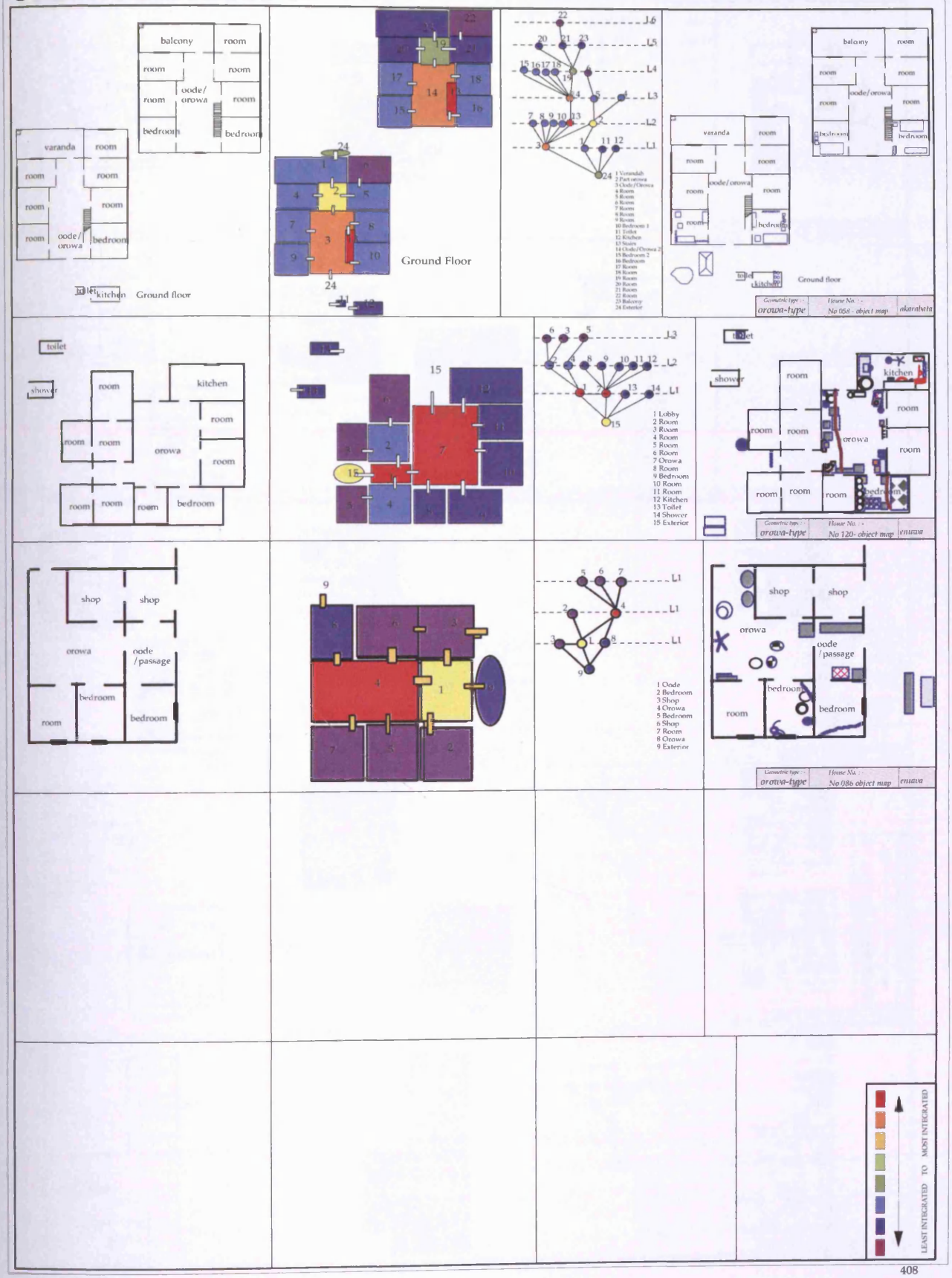
OROWA GENOTYPE



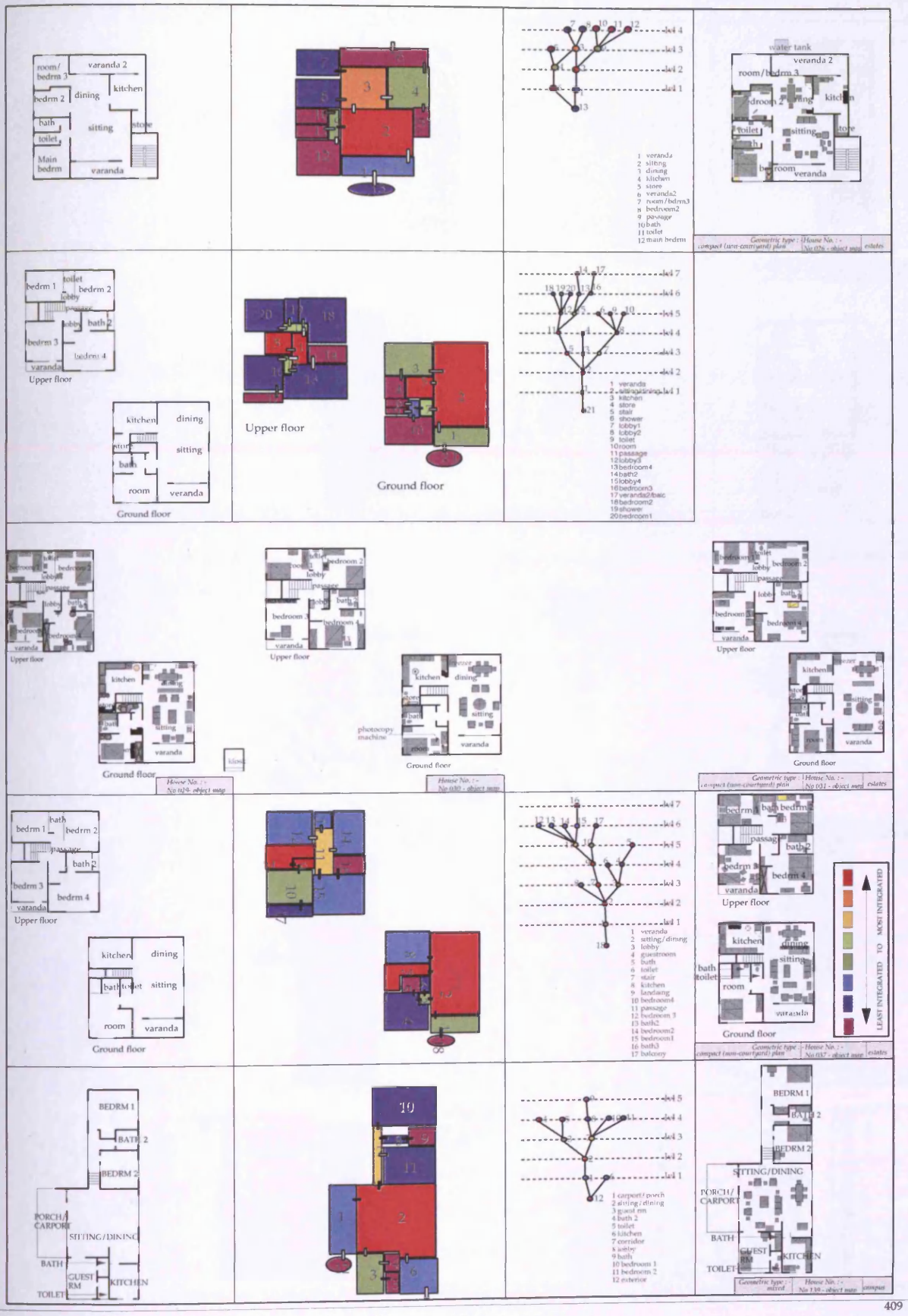
OROWA GENOTYPE



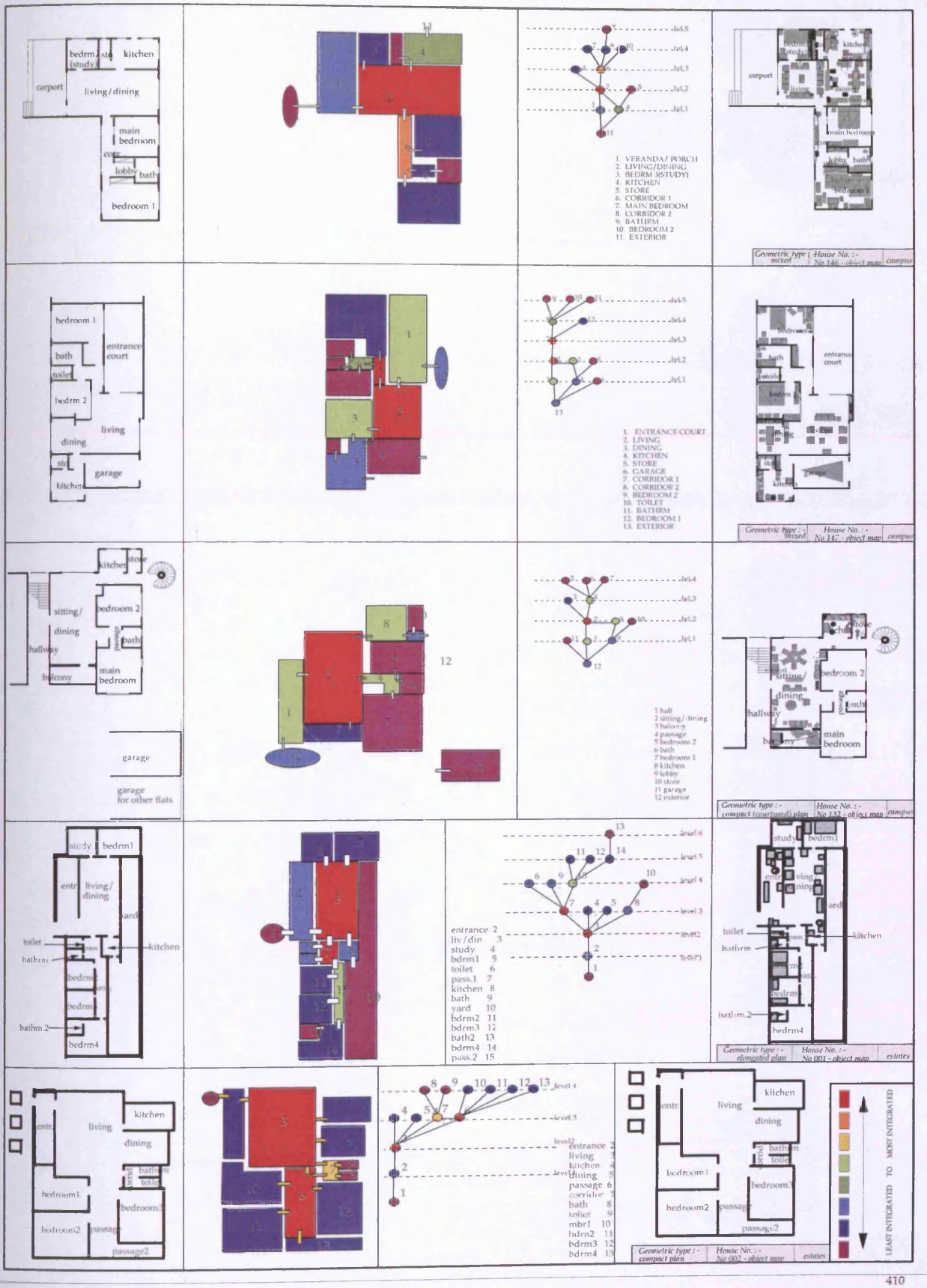
OROWA GENOTYPE



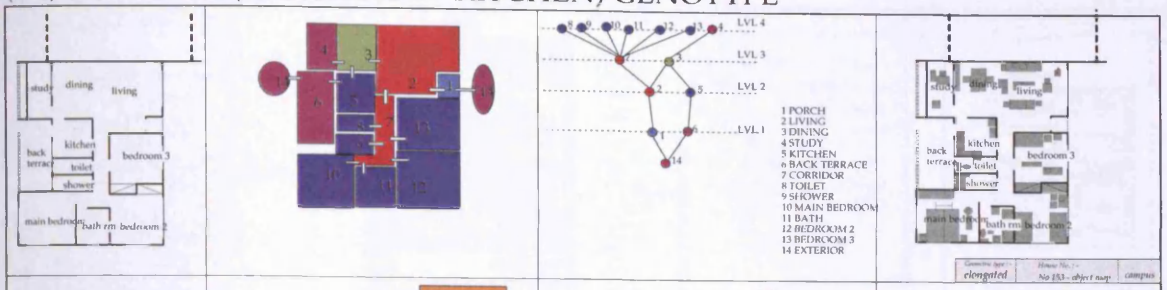
LIVING-ROOM GENOTYPE

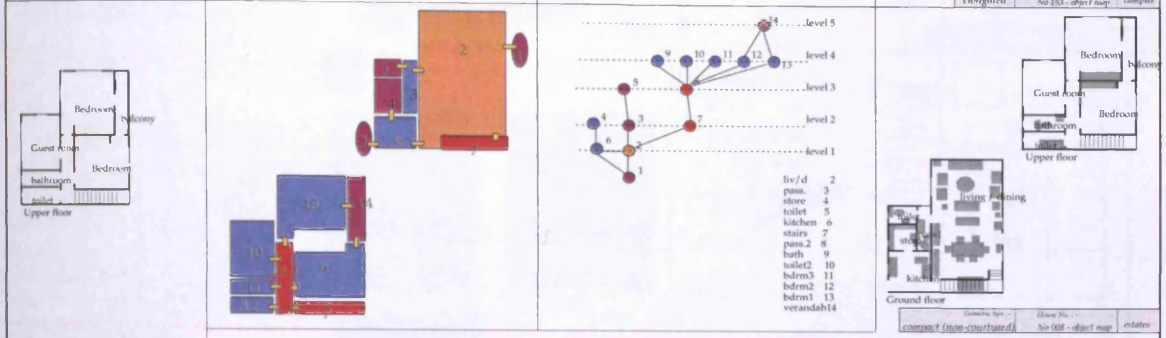


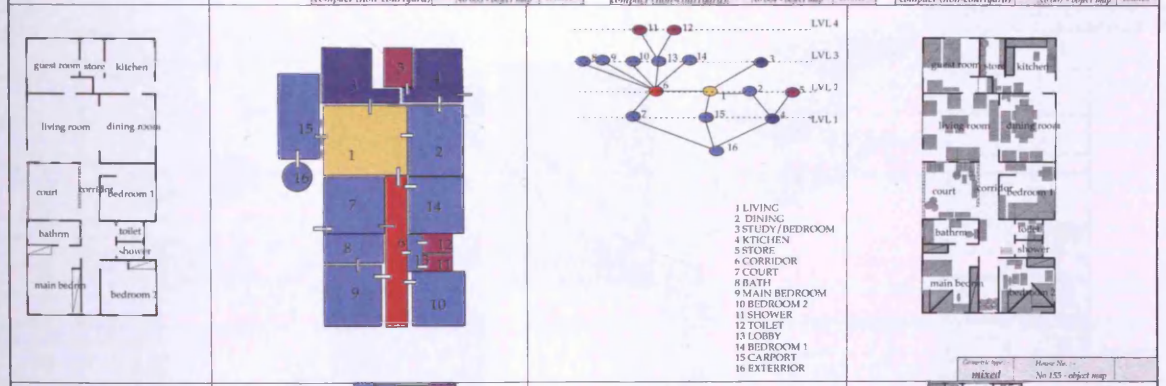
LIVING-ROOM GENOTYPE

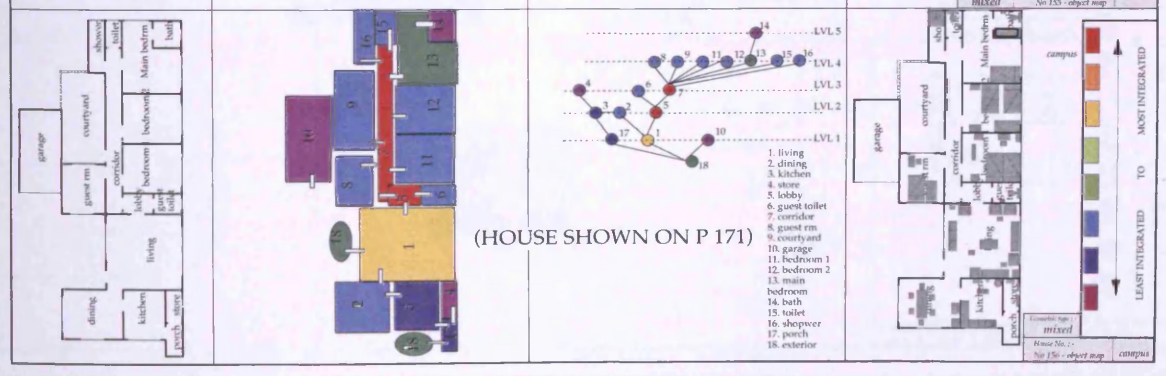


(DL)-CORRIDOR (SEGREGATED KITCHEN) GENOTYPE





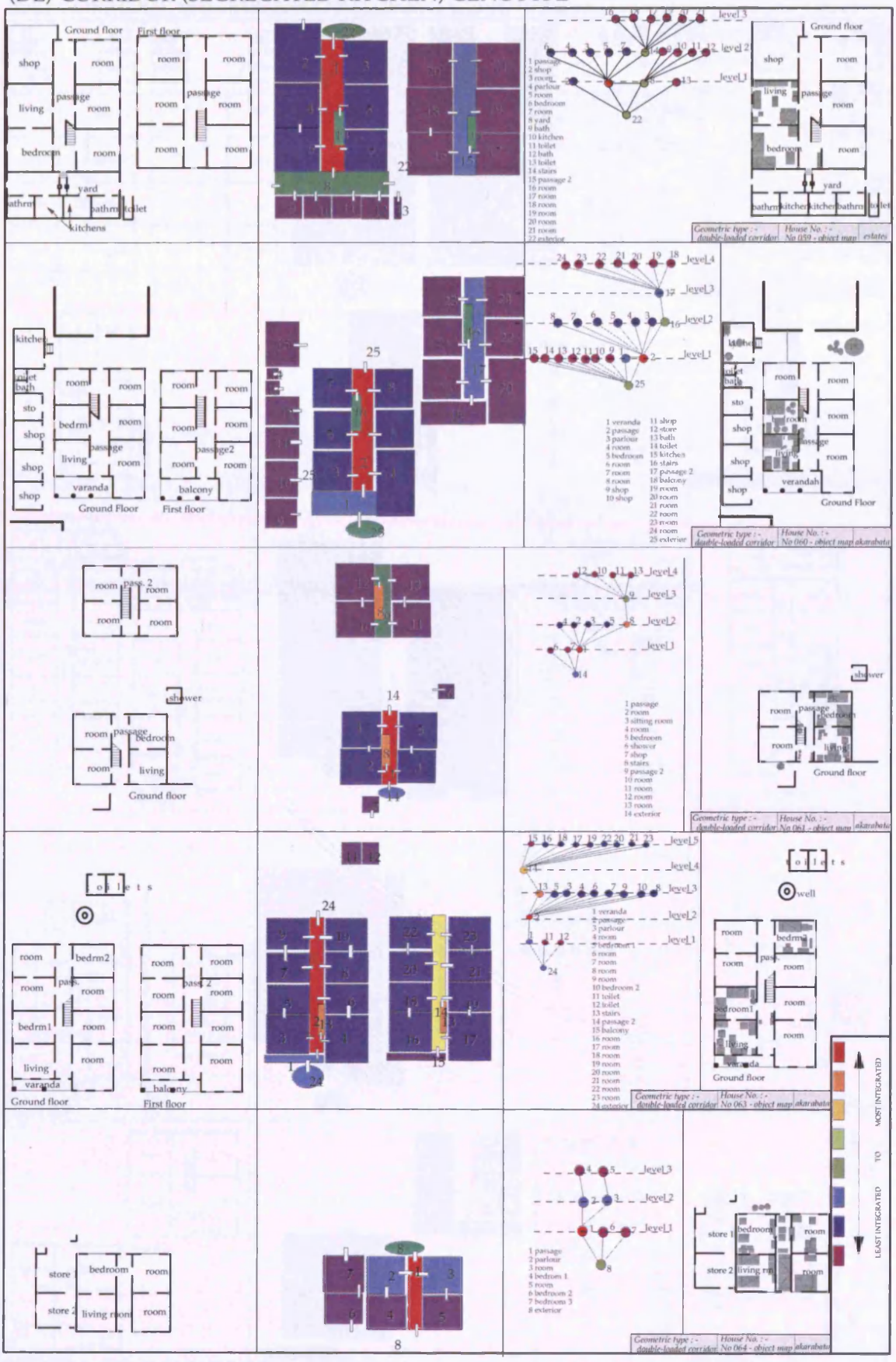




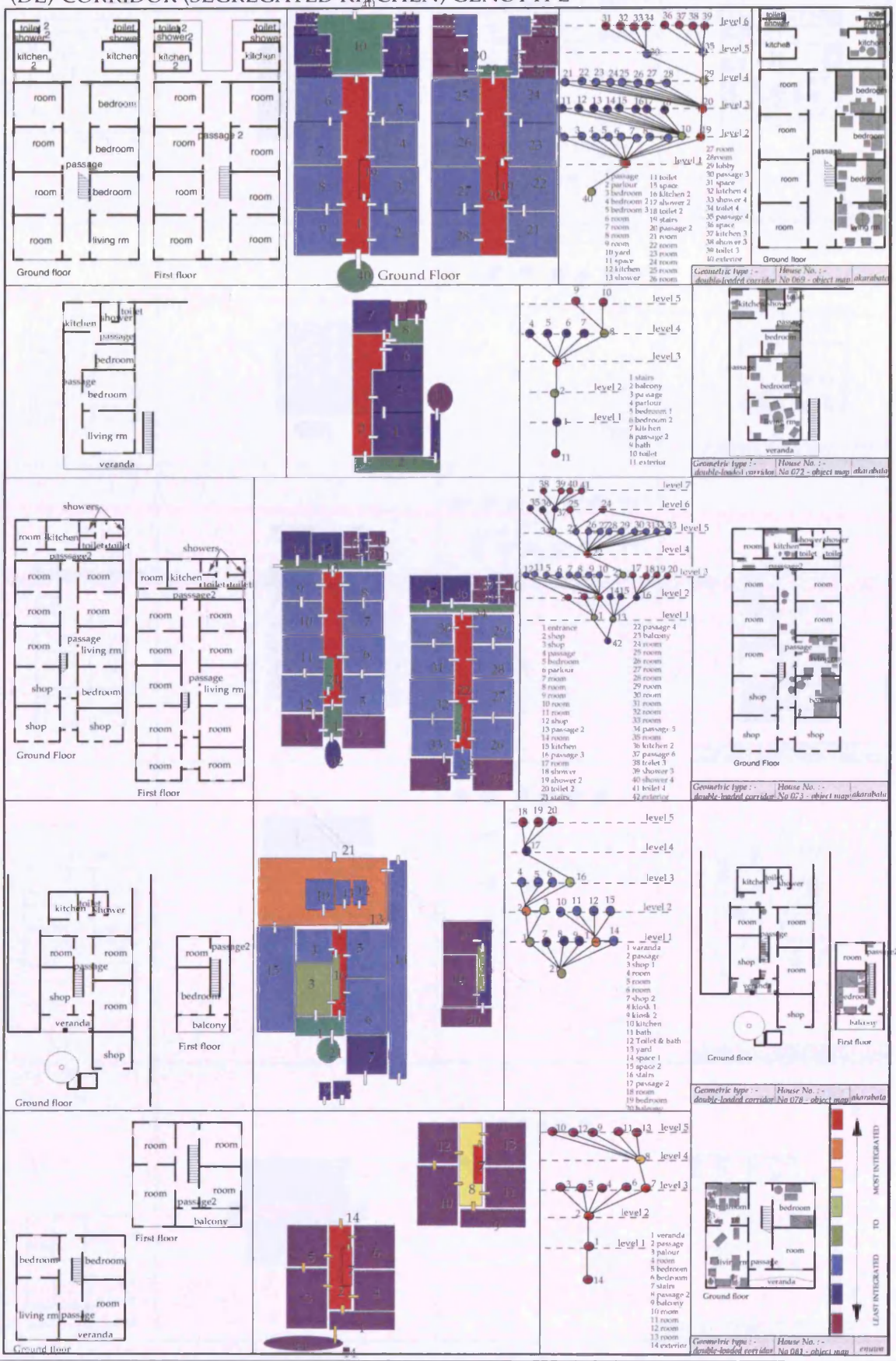
(HOUSE SHOWN ON P 171)

(DL)-CORRIDOR (SEGREGATED KITCHEN) GENOTYPE

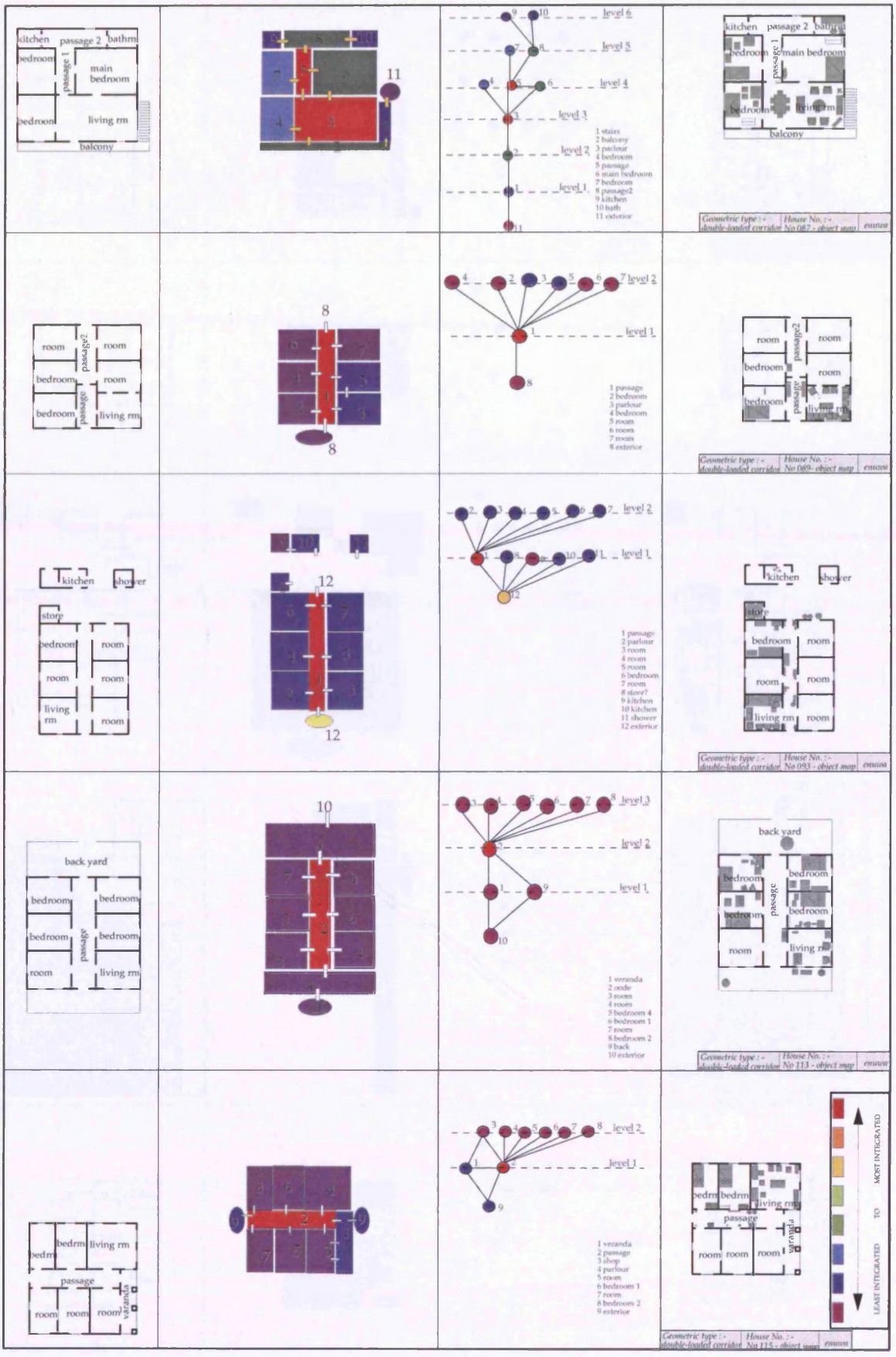
(DL)-CORRIDOR (SEGREGATED KITCHEN) GENOTYPE



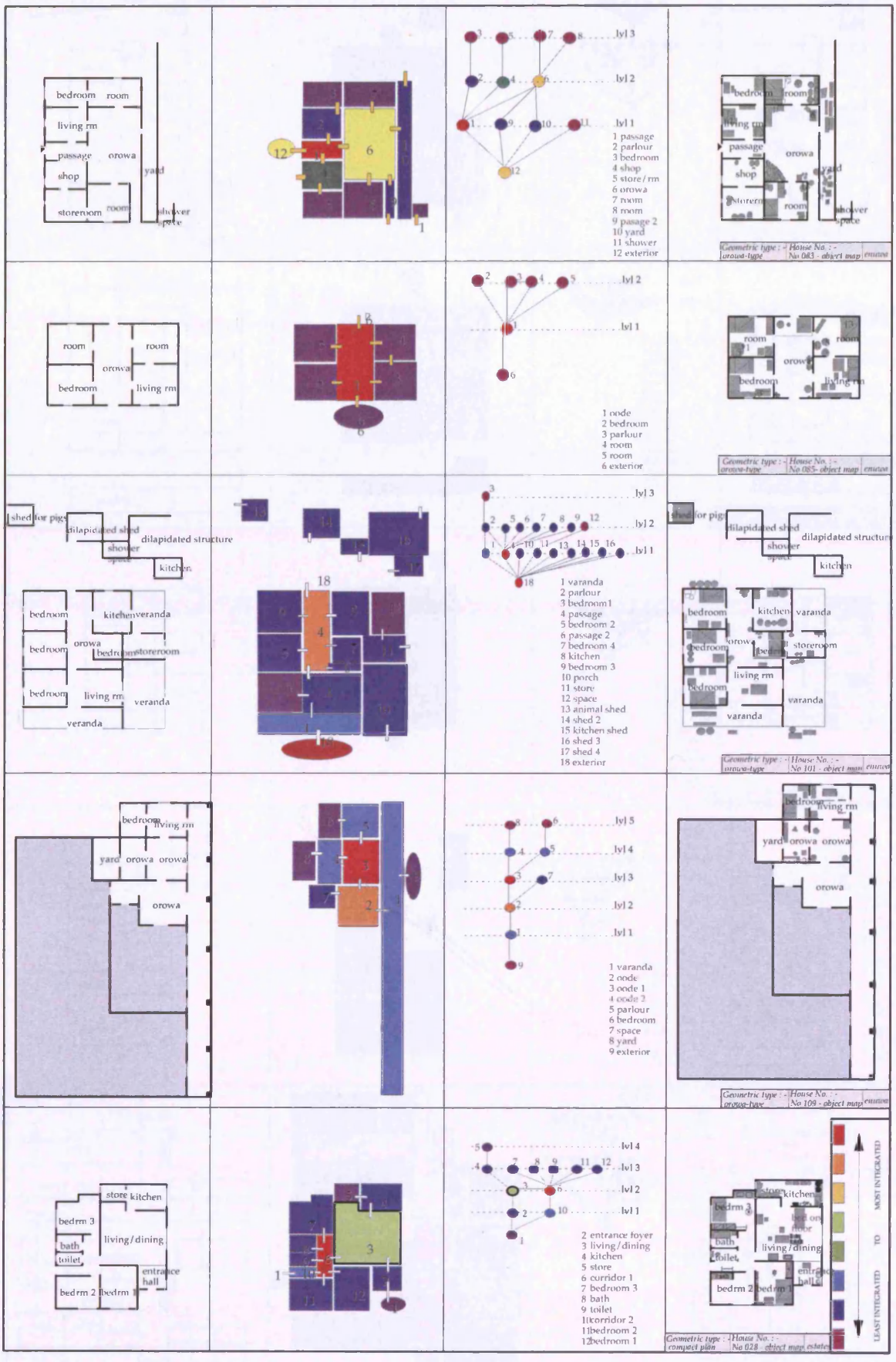
(DL)-CORRIDOR (SEGREGATED KITCHEN) GENOTYPE



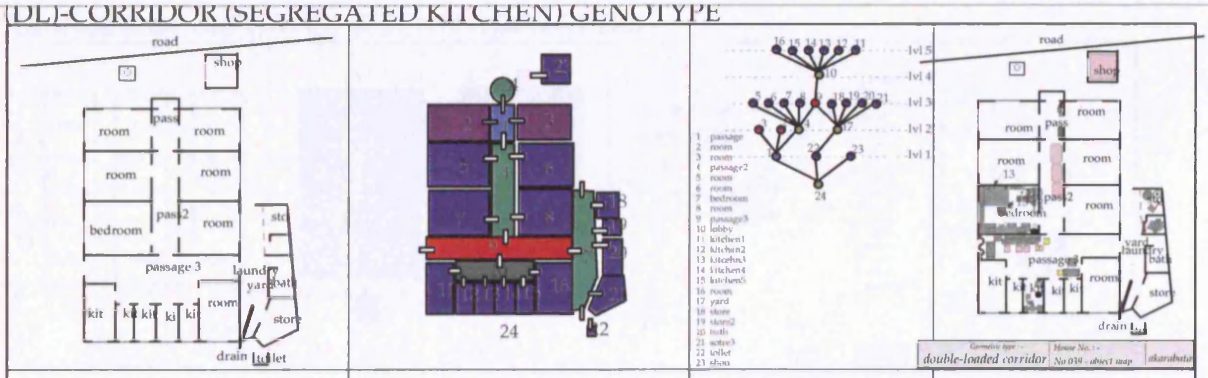
(DL)-CORRIDOR (SEGREGATED KITCHEN) GENOTYPE

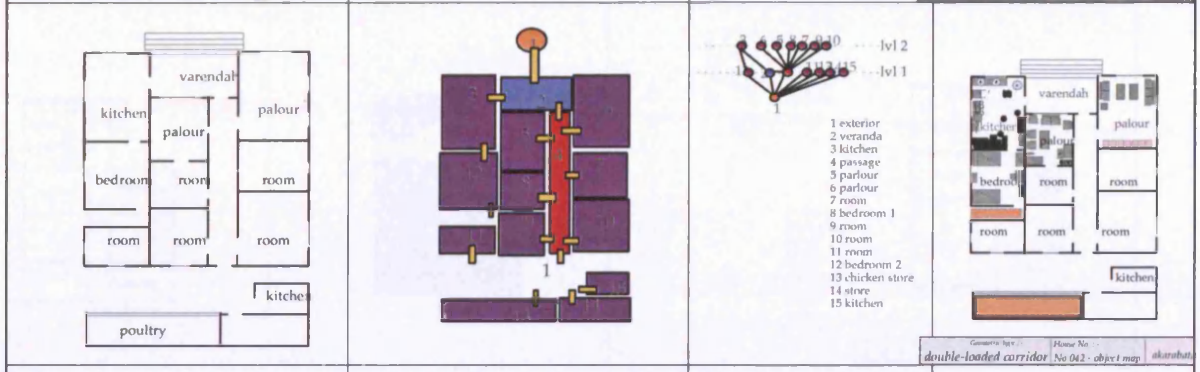


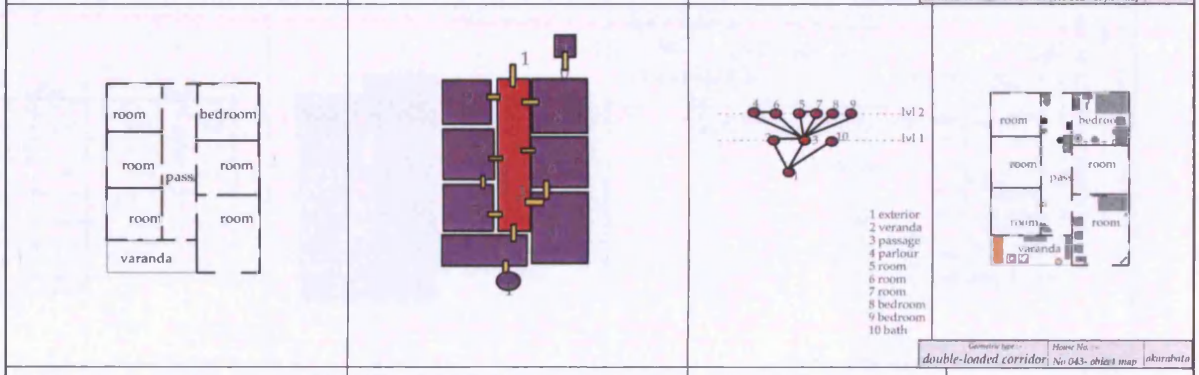
(DL)-CORRIDOR (SEGREGATED KITCHEN) GENOTYPE

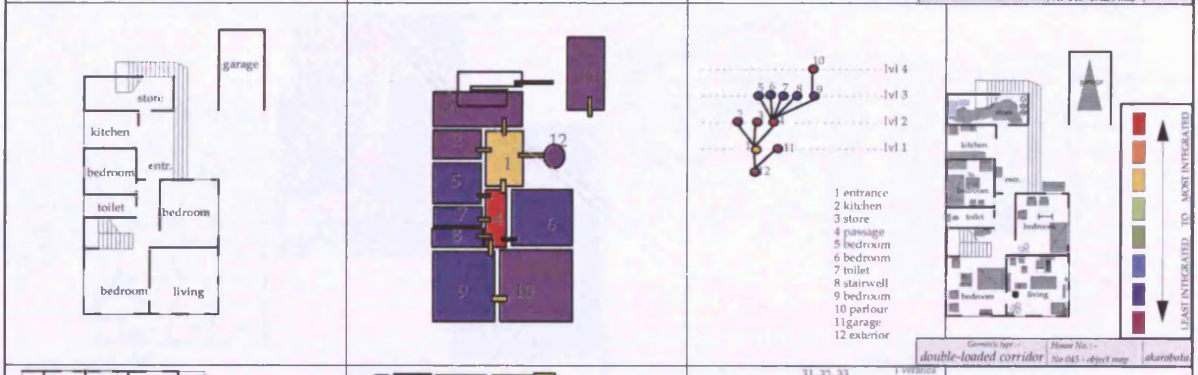


DL)-CORRIDOR (SEGREGATED KITCHEN) GENOTYPE

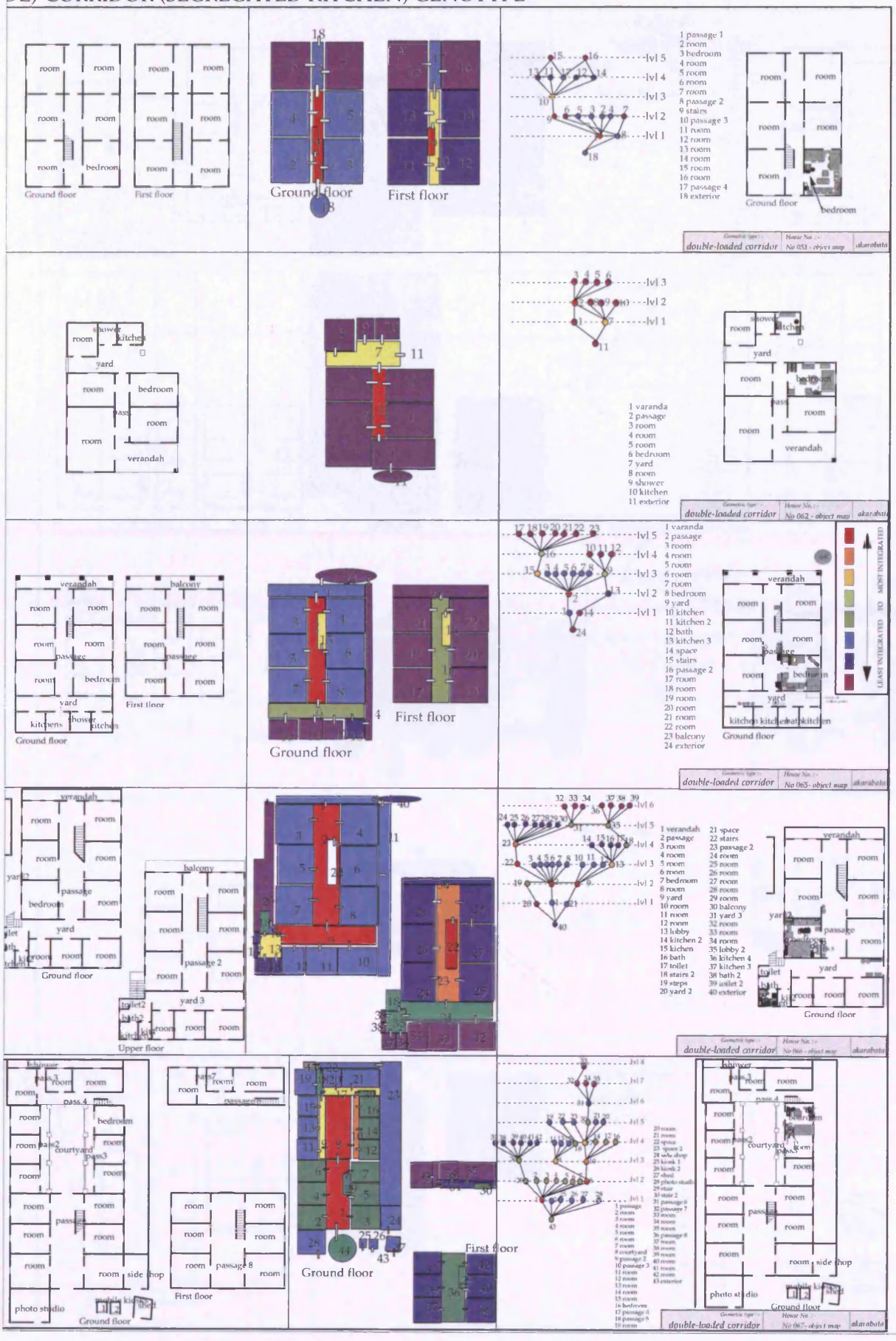




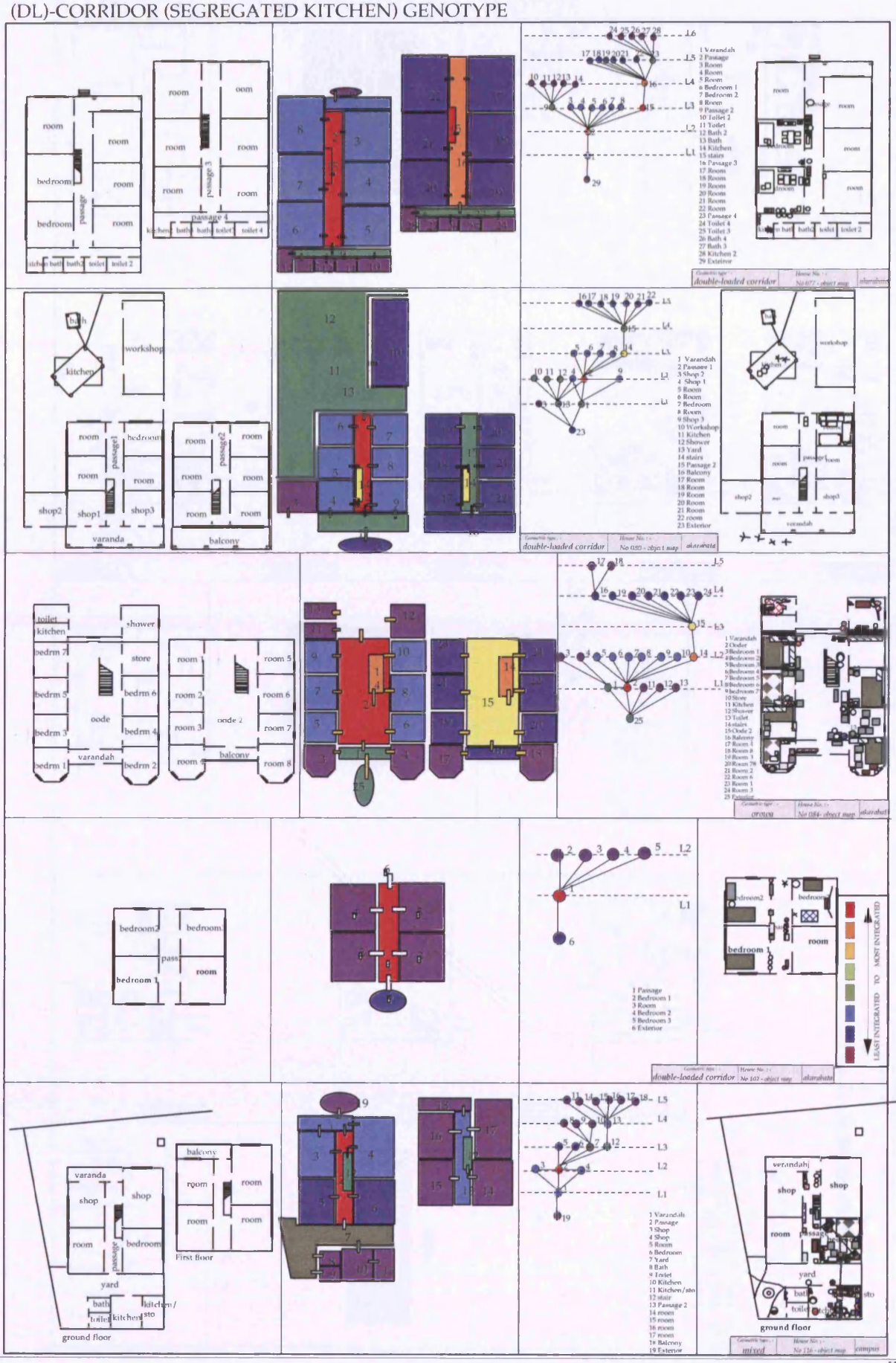




DL)-CORRIDOR (SEGREGATED KITCHEN) GENOTYPE

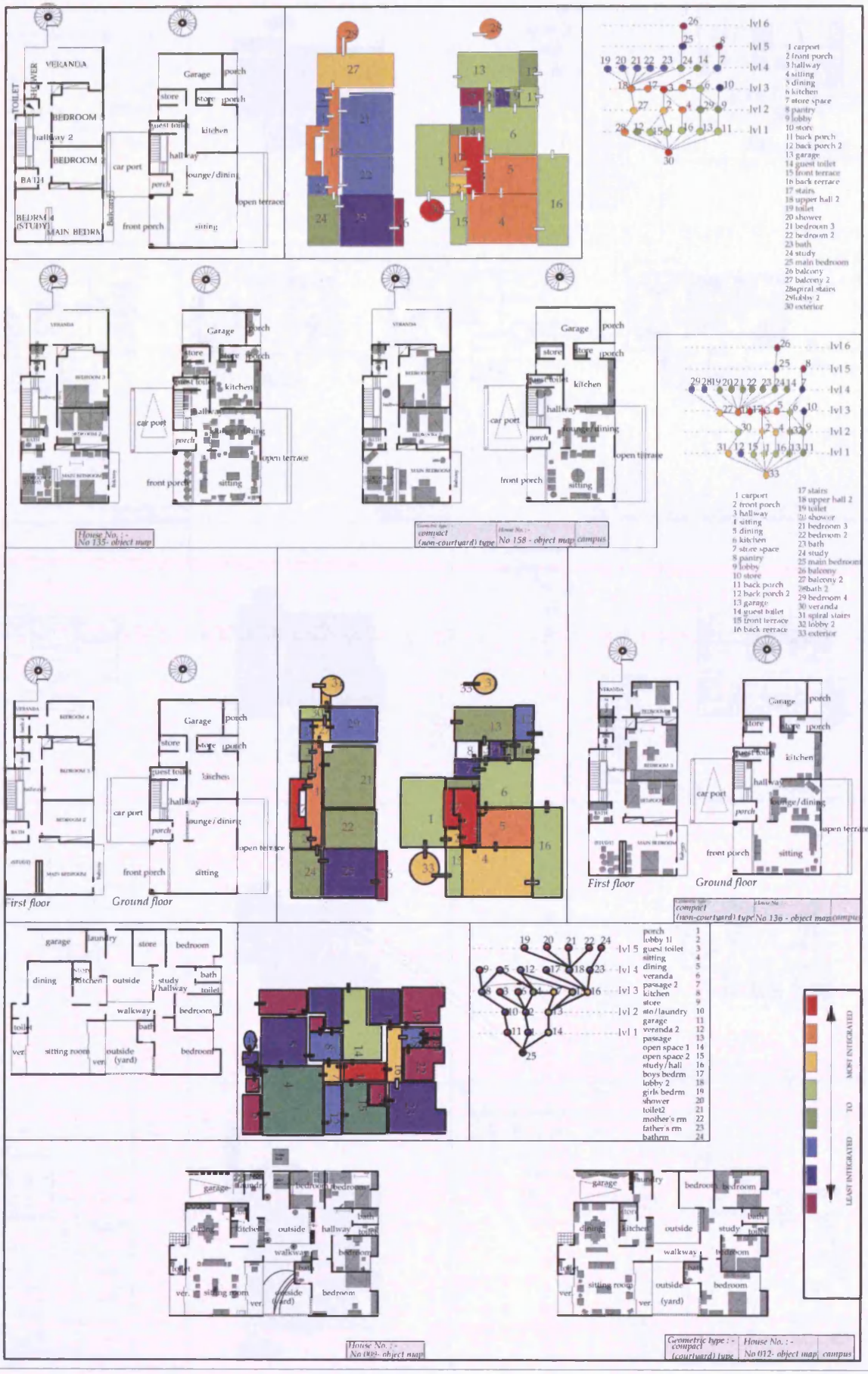


(DL)-CORRIDOR (SEGREGATED KITCHEN) GENOTYPE



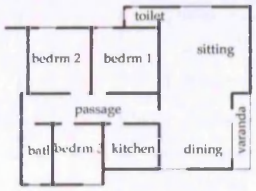
(SL)-CORRIDOR (INTEGRATED KITCHEN) GENOTYPE

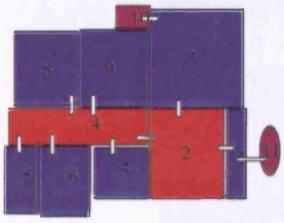
(SL)-CORRIDOR (INTEGRATED KITCHEN) GENOTYPE

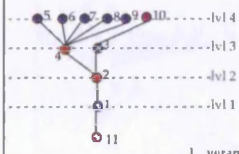


(SL)-CORRIDOR (INTEGRATED KITCHEN) GENOTYPE

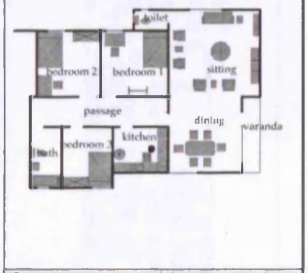
(SL)-CORRIDOR (INTEGRATED KITCHEN) GENOTYPE



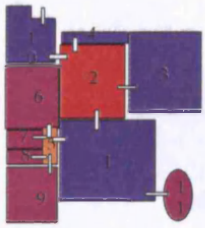


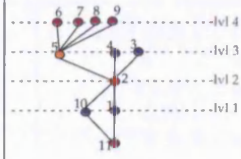


1 veranda
2 dining
3 sitting
4 passage
5 kitchen
6 bedroom3
7 bath
8 bedroom2
9 bedroom1
10 toilet



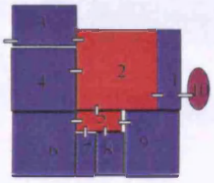
Geometric type :- compact (non-courtyard) type | House No. :- No 035 - object map | estates

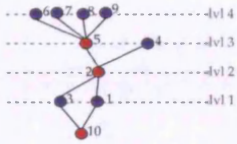




1 sitting
2 dining
3 store
4 veranda
5 lobby
6 bedroom1
7 toilet
8 bath
9 bedroom2
10 kitchen

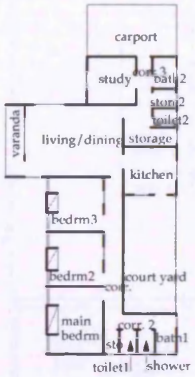
Geometric type :- compact (non-courtyard) type | House No. :- No 036 - object map | estates

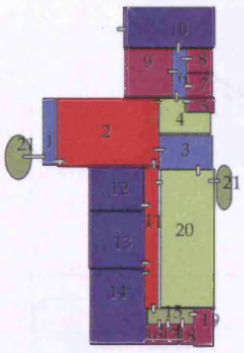


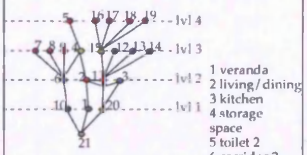


1 veranda
2 sitting / dining
3 kitchen
4 bedroom3
5 passage
6 main bedroom
7 toilet
8 bath
9 bedroom1

Geometric type :- | House No. :- compact (non-courtyard) type No 038 - object map | estates



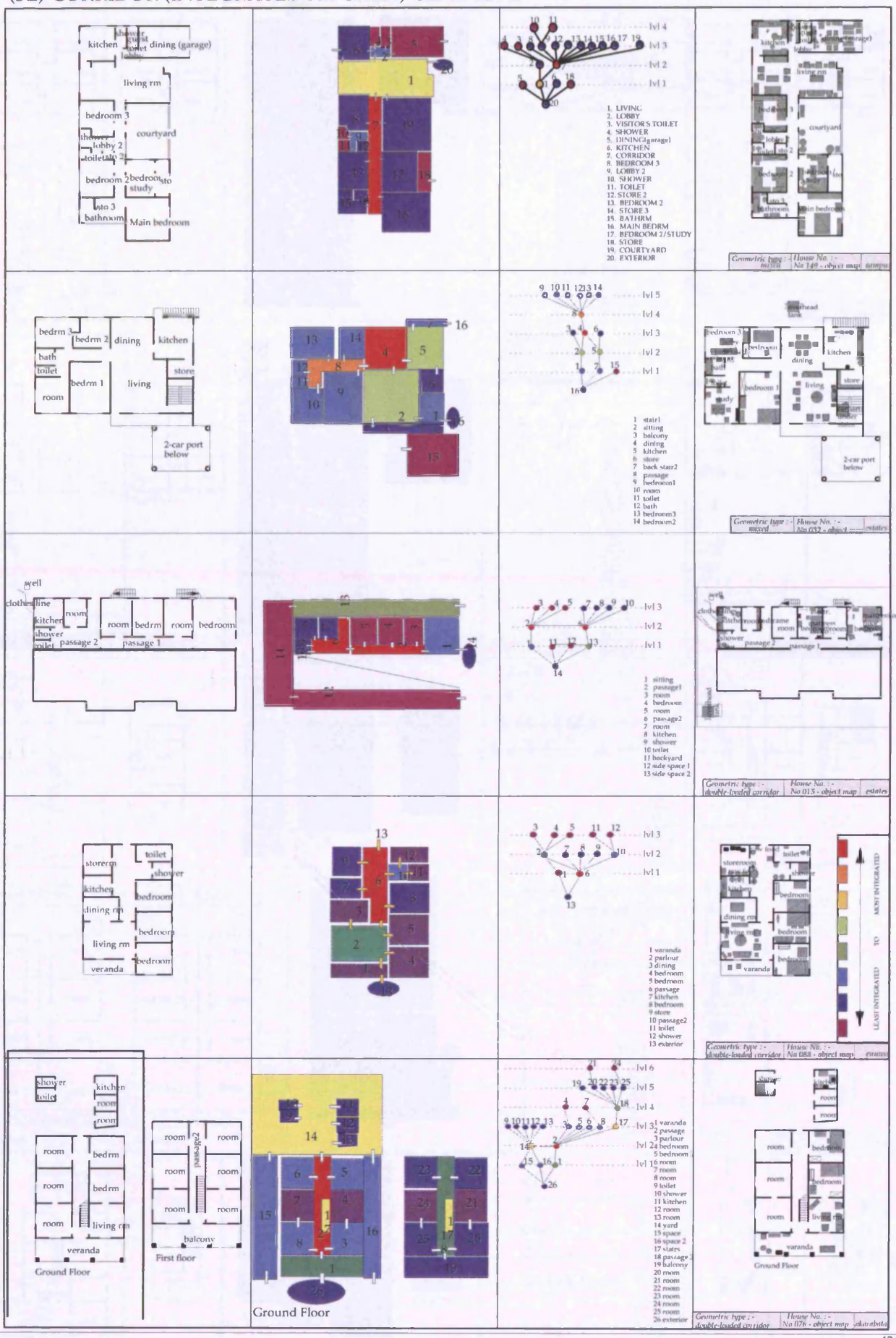




1 veranda
2 living / dining
3 kitchen
4 storage space
5 toilet 2
6 corridor 2
7 store
8 bath 2
9 study
10 carport
11 corridor
12 bedroom 3
13 bedroom 2
14 main bedrm
15 corridor 2
16 store 2
17 toilet
18 shower
19 bath
20 yard
21 exterior

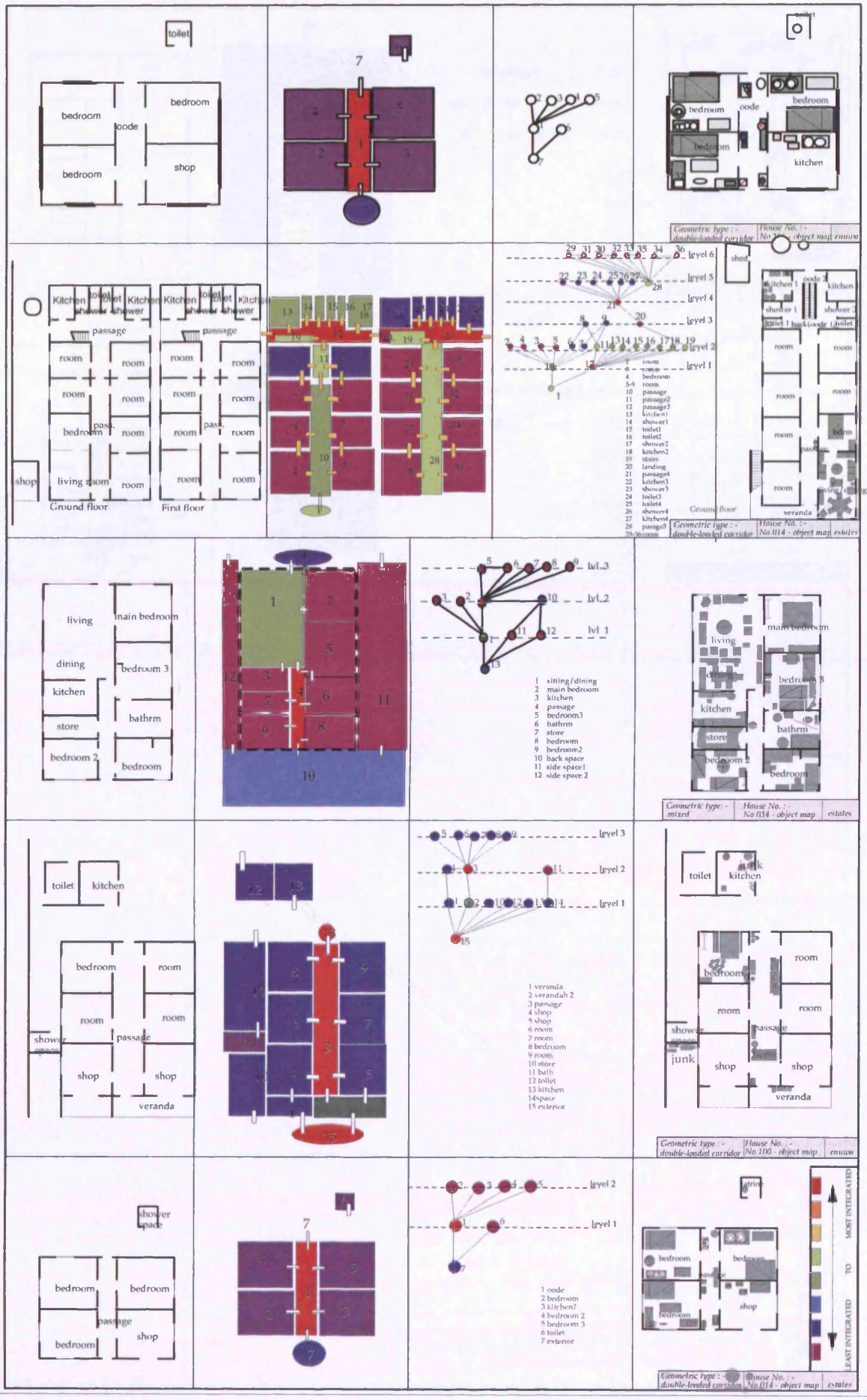
Geometric type :- mixed type | House No. :- No 140 - object map | campus

(SL)-CORRIDOR (INTEGRATED KITCHEN) GENOTYPE

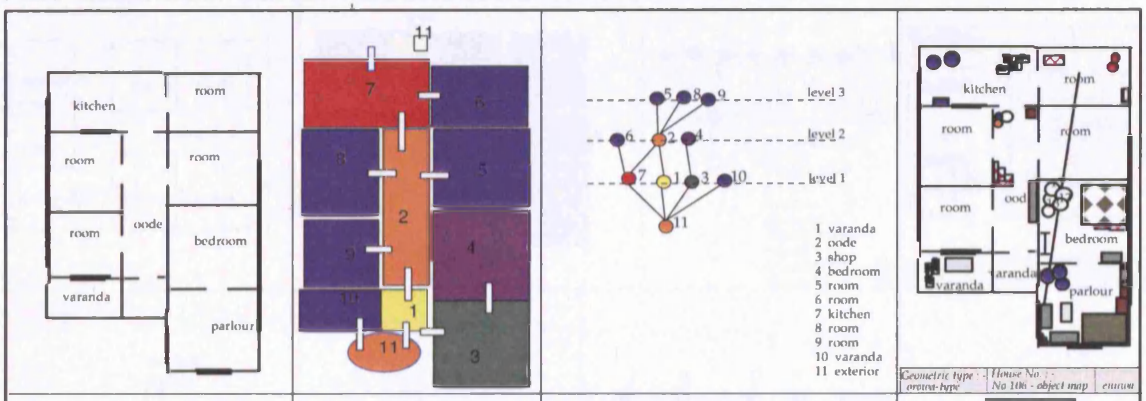


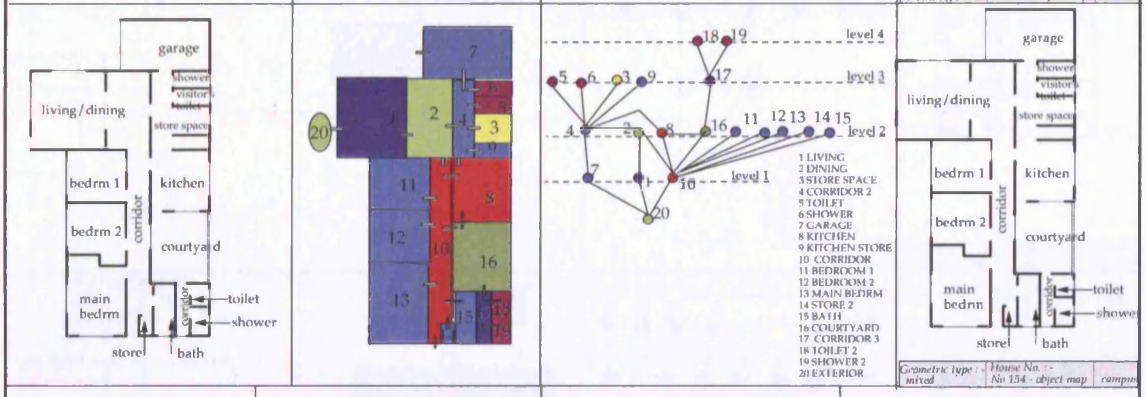
(DL)-CORRIDOR (INTEGRATED KITCHEN) GENOTYPE

(DL)-CORRIDOR (INTEGRATED KITCHEN) GENOTYPE

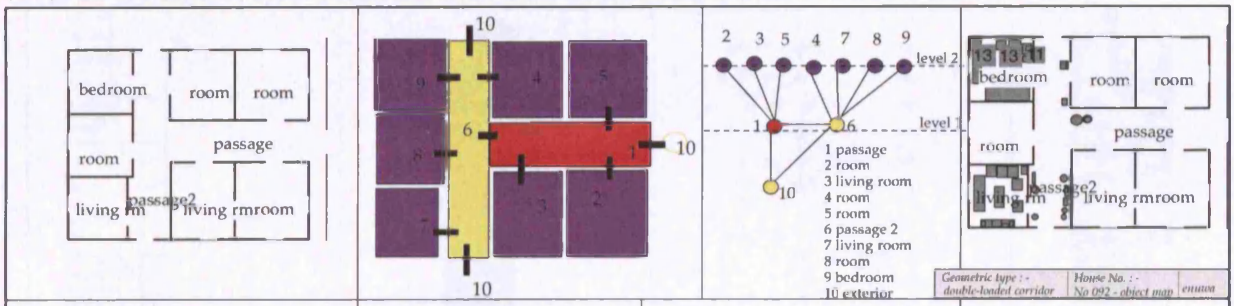


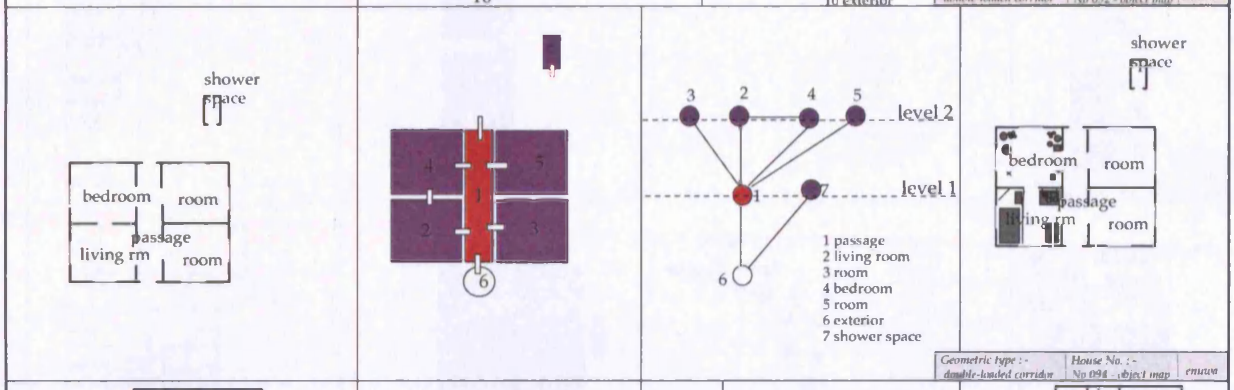
(DL)-CORRIDOR (INTEGRATED KITCHEN) GENOTYPE

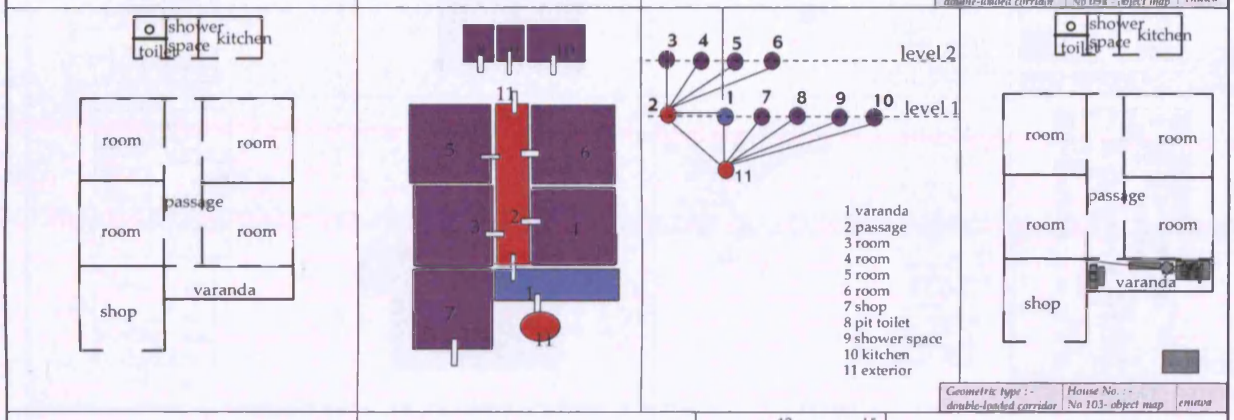


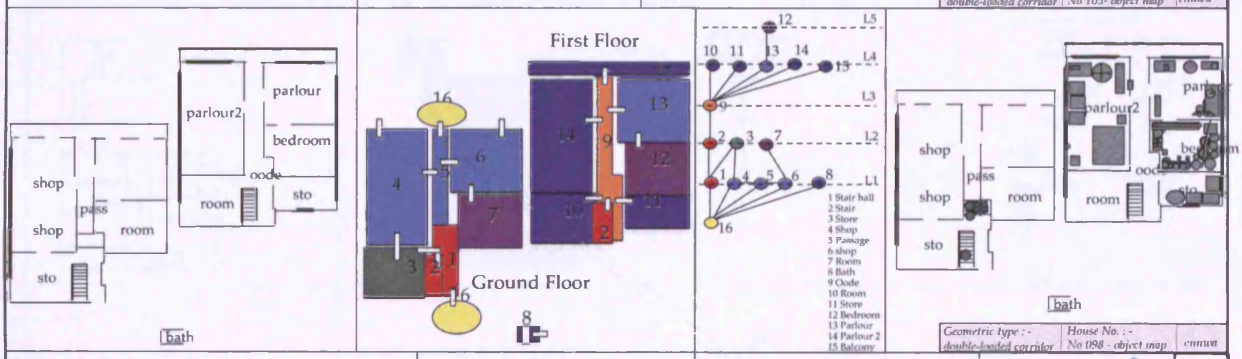


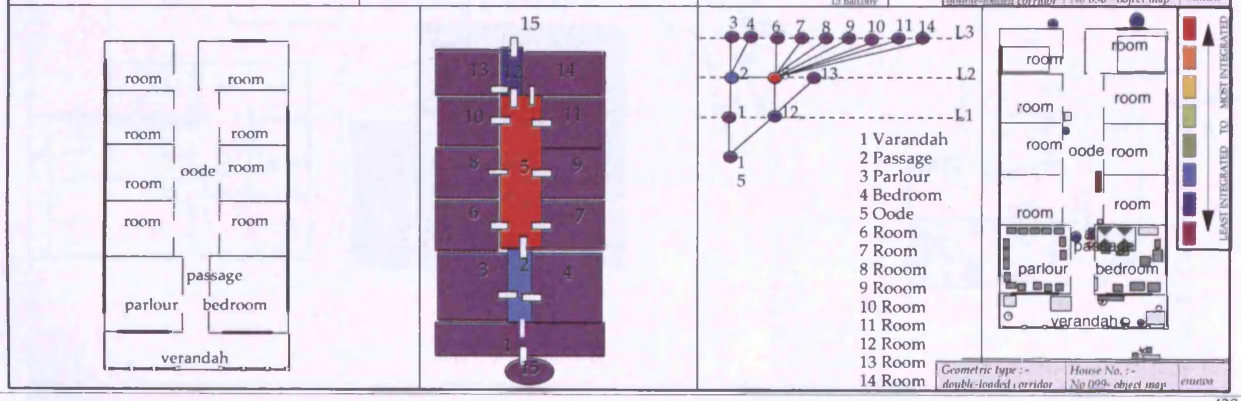
(DL)-CORRIDOR (SEGREGATED FUNCTION SPACES) GENOTYPE



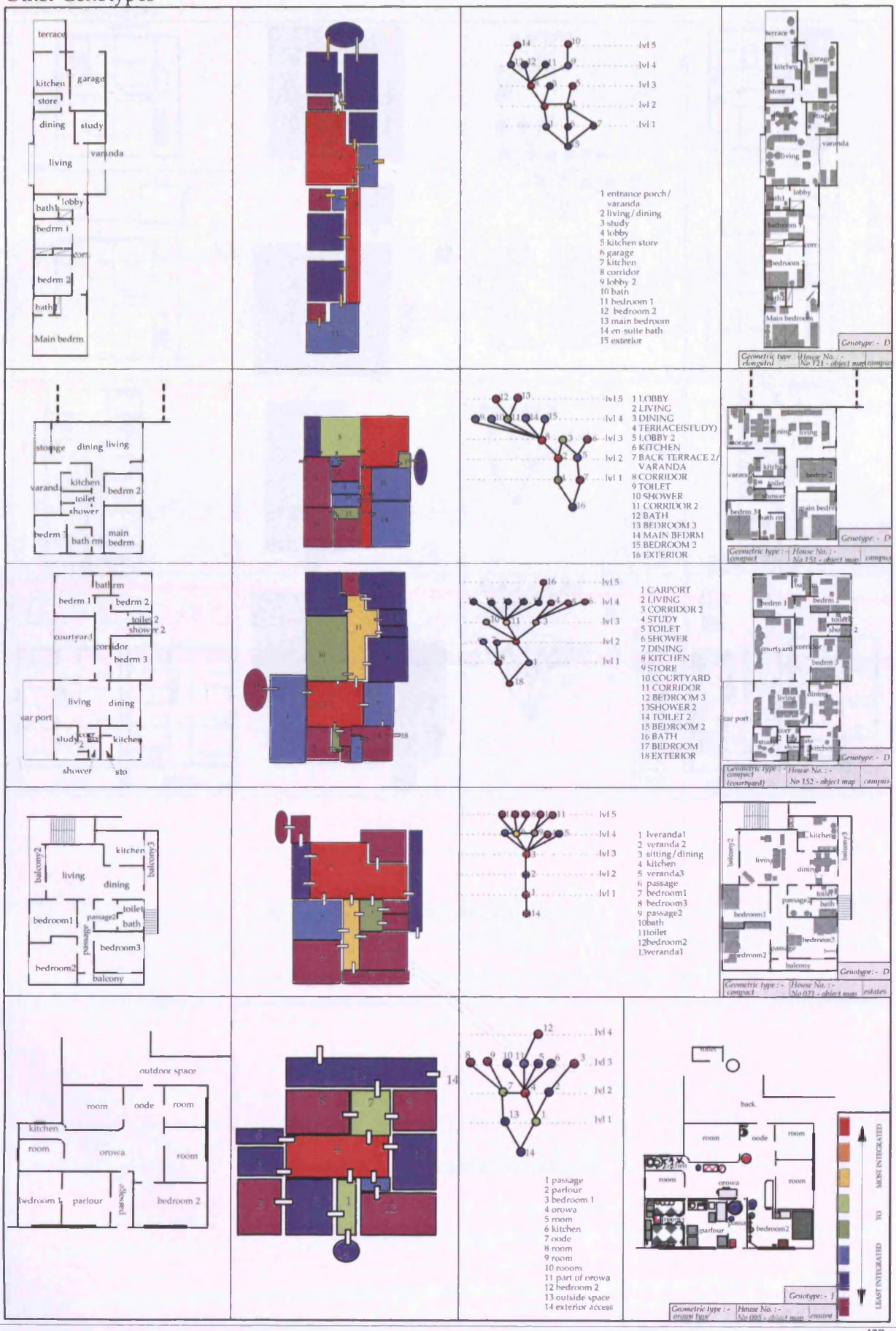




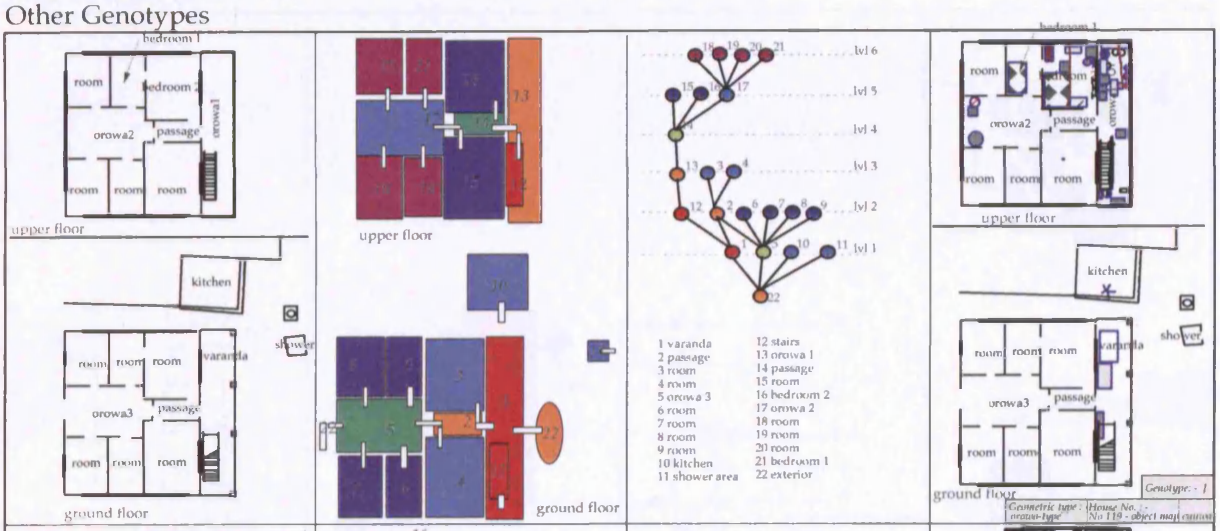


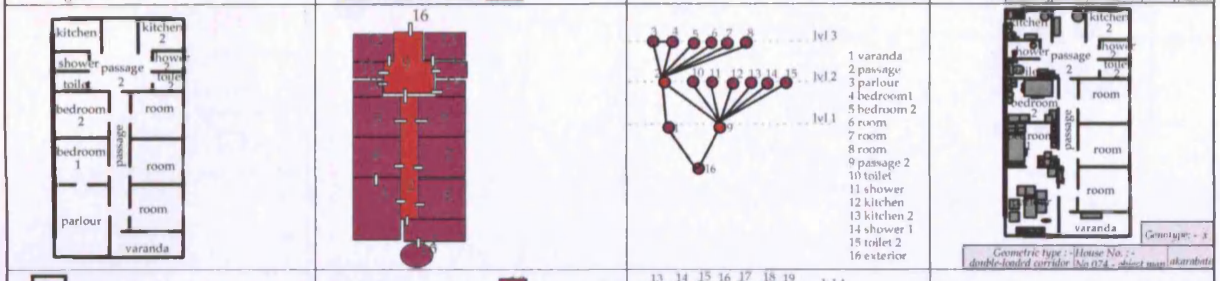


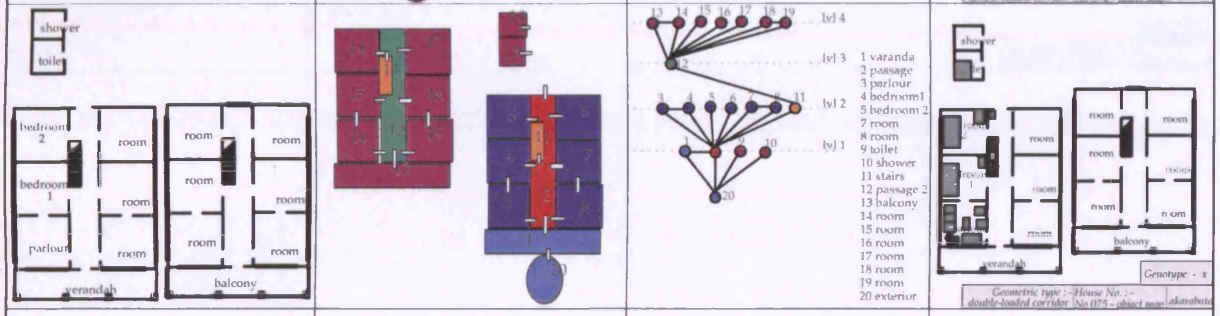
Other Genotypes



Other Genotypes



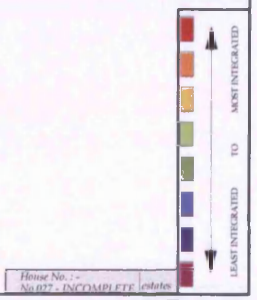




INCOMPLETE DATA ON GEOMETRY AND GENOTYPE

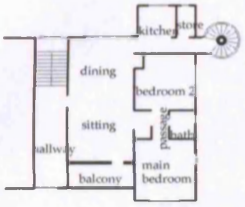
House No. :-
No 011 - INCOMPLETE
estates

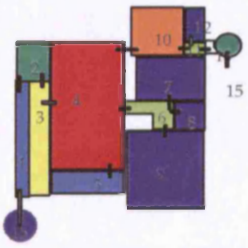
INCOMPLETE DATA ON GEOMETRY AND GENOTYPE

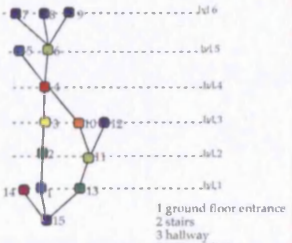


House No. :-
No 077 - INCOMPLETE
estates

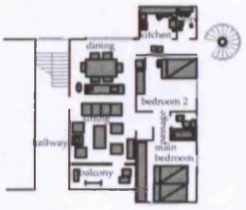
Other Genotypes







1 ground floor entrance
2 stairs
3 hallway
4 sitting/dining
5 balcony
6 passage
7 bedroom 1
8 bathrm
9 bedroom 2
10 kitchen
11 passage 2
12 store
13 circular stairs
14 garage
15 exterior



Genotype: - K

Geometric type : compact | House No. : - No 134 - object map/campus

first floor

Genotype: - K

Geometric type : compact | House No. : - No 132 - object map/campus

garage

garage for other flats

House No. : - No 027 - INCOMPLETE | estates